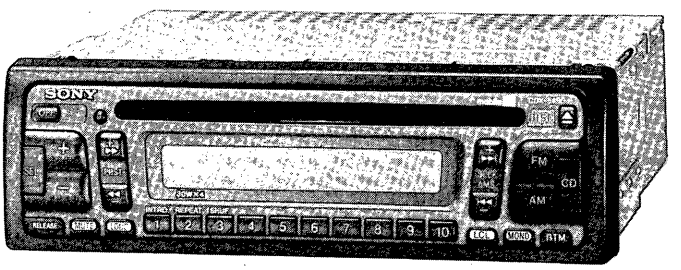
CDX-5490

SERVICE MANUAL

US Model



COMPACT disc DIGITAL AUDIO

Model Name Using Similar Mechanism	CDX-5470
CD Drive Mechanism Type	MG-305X-130
Optical Pick-Up Name	KSS-410A

SPECIFICATIONS

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION
12 watts per channel minimum continuous average power into 4 ohms, 4 channels driven from 20 Hz to 20 kHz with no more than 1 % total harmonic distortion.

CD player section

System	Compact disc digital audio system
Signal-to- noise ratio	90 dB
Frequency response	10 – 20,000 Hz
Wow and flutter	Below measurable limit
Laser Diode Properties	
Material	GaAlAs
Wavelength	780 nm
Emission Duration	Continuous
Laser output power	Less than 44.6 µW*

*This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.

Tuner section

FM

Tuning range	87.5 – 107.9 MHz
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	8 dBf
Selectivity	75 dB at 400 kHz
Signal-to-noise ratio	65 dB (stereo), 68 dB (mono)
Harmonic distortion at 1 kHz	0.5 % (stereo), 0.3 % (mono)
Separation	35 dB at 1 kHz
Frequency response	30 – 15,000 Hz
Capture ratio	2 dB

AM

Tuning range	530 – 1,710 kHz
Antenna terminal	External antenna connector
Intermediate frequency	10.71 MHz/450 kHz
Sensitivity	30 µV

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 – 8 ohms
Maximum power output	30 W × 4 (at 4 ohms)

General

Output lead	Power amplifier control lead
Tone controls	Bass ±8 dB at 100 Hz Treble ±8 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 188 × 50 × 177 mm (7 1/2 × 2 × 7 in.) (w/h/d) not incl. projecting parts and controls
Mounting dimension	Approx. 178 × 50 × 154 mm (7 1/8 × 2 × 6 1/8 in.) (w/h/d) not incl. projecting parts and controls
Mass	Approx. 1.5 kg (3 lb 5 oz.)
Supplied accessories	Power connecting cord (1) Mounting hardware (1 set) Front panel case (1)

Design and specifications are subject to change without notice.

使用時は添付資料も参照のこと
Refer to the additional documents

FM/AM COMPACT DISC PLAYER

SONY®

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SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SERVICING NOTES

Laser Diode Properties

- Material: GaAlAs
- Wavelength: 780 nm
- Emission Duration: continuous
- Laser Output Power: less than 44.6 μW*

  * This output is the value measured at a distance of 200 mm from the objective lens surfase on the Optical Pick-up Block.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radistion exposure.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

This section is extracted from instruction manual.

SECTION 1
GENERAL

Installation

Precautions

- Do not tamper with the four holes on the upper surface of the unit. They are for tuner adjustments to be done only by service technicians.
- Choose the installation location carefully so that the unit will not hamper the driver during driving.
- Avoid installing the unit where it would be subject to high temperatures, such as from direct sunlight or hot air from the heater, or where it would be subject to dust, dirt or excessive vibration.
- Use only the supplied mounting hardware for a safe and secure installation.

Mounting angle adjustment

Adjust the mounting angle to less than 20°.

How to Detach and Attach the Front Panel

Before installing the unit, detach the front panel.

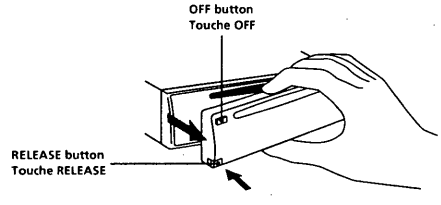
To detach

Before detaching the front panel, be sure to press the OFF button first. Then press the RELEASE button to open up the front panel by pulling it towards you as illlustrated.

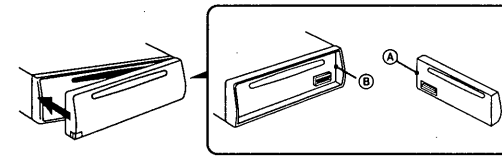
To attach

Align the parts Ⓐ and Ⓑ, and push the front panel until it clicks.

To detach
Retrait



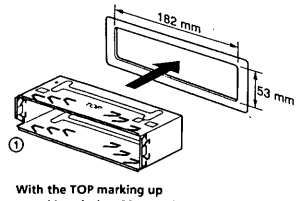
To attach
Pose



Mounting Example

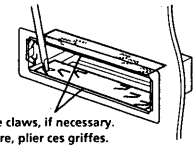
Installation in the dashboard

1



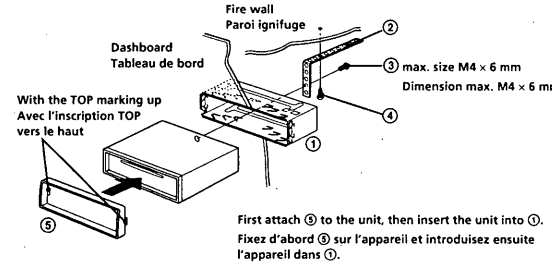
With the TOP marking up
Avec l'inscription TOP vers le haut

2



Bend these claws, if necessary.
Si nécessaire, plier ces griffes.

To support the unit
Pour installer l'appareil



First attach ⑤ to the unit, then insert the unit into ①.
Fixez d'abord ⑤ sur l'appareil et introduisez ensuite l'appareil dans ①.

Installation

Précautions

- Ne pas toucher les quatre orifices sur le panneau supérieur de l'appareil. Ils servent aux réglages du tuner qui ne doivent être effectués que par un technicien.
- Choisir soigneusement l'emplacement de l'installation, pour que l'appareil ne gêne pas la conduite.
- Eviter d'installer l'appareil dans un endroit exposé à des températures élevées, comme en plein soleil ou à proximité d'une bouche d'air chaud, ou à de la poussière, saleté ou vibrations violentes.
- Pour garantir un montage sûr, n'utiliser que le matériel fourni.

Réglage de l'angle de montage

Ajuster l'inclinaison à un angle inférieur à 20°.

Retrait et pose du panneau avant

Avant d'installer l'appareil, déposer la panneau avant.

Retrait

Avant de détacher la façade, appuyez sur la touche OFF. Appuyez ensuite sur la touche RELEASE pour ouvrir la façade. Enlevez-la en la tirant vers vous, comme indiqué sur l'illustration.

Pose

Aligner les points Ⓐ et Ⓑ, puis pousser l'appareil jusqu'au déclic.

Exemple de montage

Installation dans le tableau de bord

Connections

Caution

- This unit is designed for negative ground 12 V DC operation only.
- Before making connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Connect the **yellow** and **red** power input leads only after all other leads have been connected.
- Be sure to connect the red power input lead to the positive 12 V power terminal which is energized when the ignition key is in the accessory position.
- **Run all ground wires to a common ground point.**

If Your Car has no Accessory Position on the Ignition Key Switch — POWER SELECT Switch

The illumination on the front panel is factory-set to be turned on even when the unit is not being played. However, this setting may cause some car battery wear **if your car has no accessory position on the ignition key switch.** To avoid this battery wear, **set the POWER SELECT switch located on the bottom of the unit to the ⓑ position, then press the reset button.** The illumination is reset to stay off while the unit is not being played.

Note

The caution alarm for the front panel is not activated when the POWER SELECT switch is set to the ⓑ position.

Connexions

Précautions

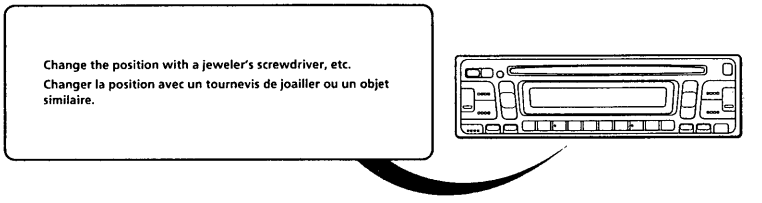
- Cet appareil est conçu pour fonctionner sur courant continu de 12 V avec masse négative.
- Avant d'effectuer les connexions, débrancher la borne de terre de la batterie du véhicule pour éviter tout court-circuit.
- Brancher les fils d'entrée d'alimentation **jaune** et **rouge** seulement après avoir terminé tous les autres branchements.
- Veiller à ne pas raccorder le fil rouge d'entrée d'alimentation à la borne positive de 12 V qui est alimentée quand la clé de contact est sur la position accessoires.
- **Rassembler tous les fils de terre en un point de masse commun.**

Si l'appareil est utilisé dans une voiture dont la clé de contact n'a pas de position accessoires — Interrupteur POWER SELECT

L'éclairage du panneau avant est réglé en usine de manière à s'allumer même quand l'appareil ne fonctionne pas. Cependant, ce réglage risque d'épuiser la batterie **si l'appareil est utilisé dans une voiture dont la clé de contact ne possède pas de position accessoires.** Pour éviter d'épuiser la batterie, régler l'interrupteur **POWER SELECT sur le socle de l'appareil sur la position ⓑ, puis appuyer sur la touche de réinitialisation.** L'éclairage est réglé pour rester éteint quand l'appareil n'est pas utilisé.

Remarque

Quand l'interrupteur POWER SELECT est réglé sur la position ⓑ, l'avertisseur du panneau avant ne fonctionne pas.

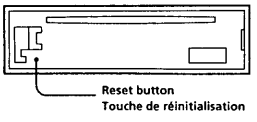

Change the position with a jeweler's screwdriver, etc.
Changer la position avec un tournevis de joailler ou un objet similaire.

Reset Button

When the installation and connections are over, be sure to press the reset button with a ball-point pen etc.

Touche de réinitialisation

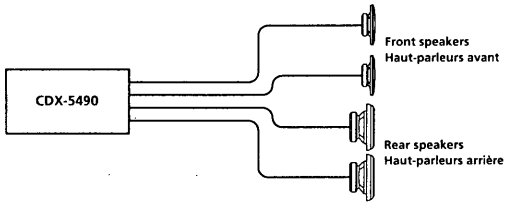
Quand l'installation et les connexions sont terminées, appuyer sur la touche de réinitialisation avec un stylo bille ou un objet pointu.



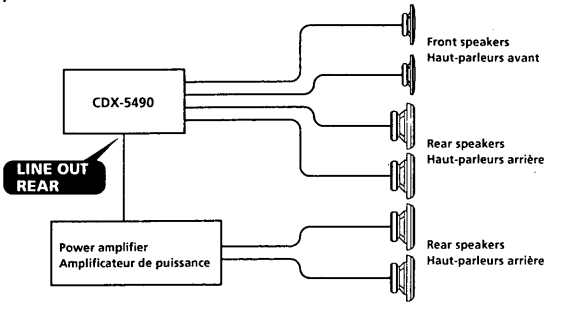
Connection Diagram

Schémas de connexion

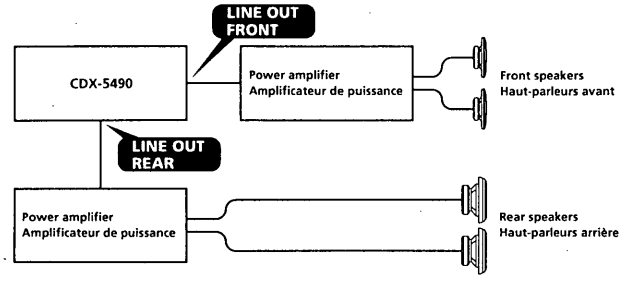
Example 1
Exemple 1



Example 2
Exemple 2

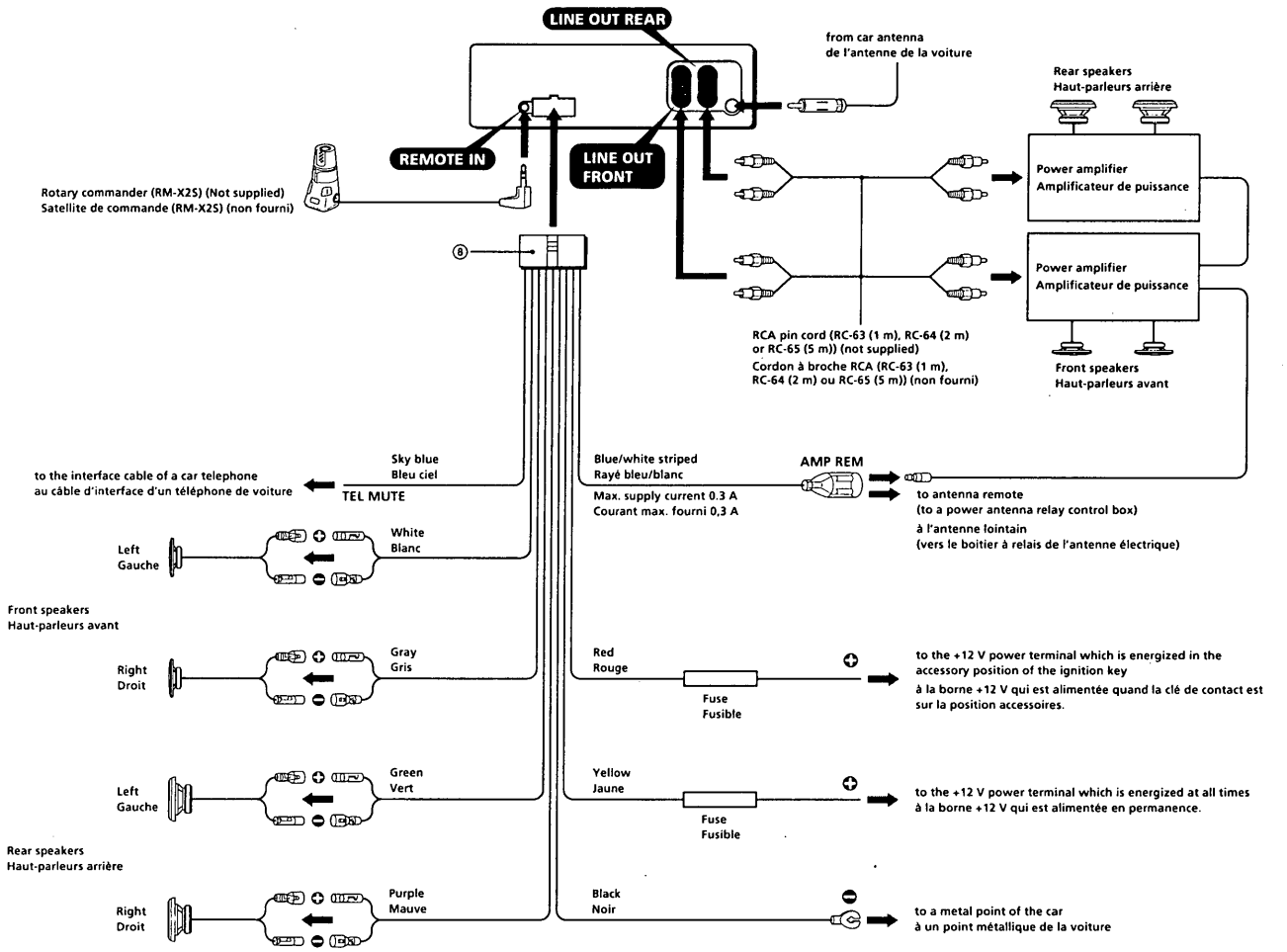


Example 3
Exemple 3



Connections of Example

Connexions de l'exemple



Notes on the control leads

- *The AMP REM lead (blue/white striped) supplies +12 V DC when you turn on the unit. When the AMP REM lead is connected to the power antenna, the antenna will be extended as long as the unit is turned on.*
- *A power antenna without relay box cannot be used with this unit.*

Memory hold connection

When the yellow power input lead is connected, power will always be supplied to the memory circuit even when the ignition key is turned off.

Notes on speaker connection

- *Before connecting the speakers, turn the unit off.*
- *Use speakers with an impedance of 4 to 8 ohms, and with adequate power handling capacities. Otherwise, the speakers may be damaged.*
- *Do not connect the terminals of the speaker system to the car chassis, and do not connect the terminals of the right speaker with those of the left speaker.*
- *Do not attempt to connect the speakers in parallel.*
- *Do not connect any active speakers (with built-in amplifiers) to the speaker terminals of the unit. Doing so may damage the active speakers. Therefore, be sure to connect passive speakers to these terminals.*

Remarques sur les fils de contrôle

- *Le fil d'AMP REM (rayé bleu/blanc) fournit du courant continu de +12 V lorsque vous mettez l'appareil sous tension. Si le fil d'AMP REM est raccordé à l'antenne électrique, l'antenne restera déployée aussi longtemps que l'appareil sera sous tension.*
- *Une antenne électrique sans boîtier de relais ne peut pas être utilisée avec cet appareil.*

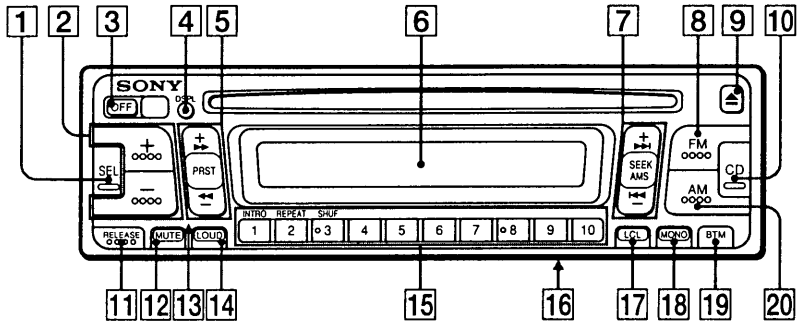
Connexion pour la conservation de la mémoire

Lorsque le fil d'entrée d'alimentation jaune est connecté, le circuit de la mémoire est alimenté en permanence même si la clé de contact est sur la position d'arrêt.

Remarques sur la connexion des haut-parleurs

- *Avant de raccorder les haut-parleurs, mettre l'appareil hors tension.*
- *Utiliser des haut-parleurs ayant une impédance de 4 à 8 ohms et une capacité adéquate sous peine de les endommager.*
- *Ne pas raccorder les bornes du système de haut-parleurs au châssis de la voiture et ne pas connecter les bornes du haut-parleur droit à celles du haut-parleur gauche.*
- *Ne pas tenter de raccorder les haut-parleurs en parallèle.*
- *Ne pas raccorder des haut-parleurs actifs (avec amplificateurs intégrés) aux bornes de haut-parleur de l'appareil sous peine de les endommager. Veiller à raccorder des haut-parleurs passifs à ces bornes.*

Location of Controls



Refer to the pages in ● for details.

1 SEL (control mode select) button ❺❾

2 (volume/bass/treble/balance/fader control) button ❺❾

3 OFF button ❹❺❻❾

4 DSPL (display mode change/time set) button ❺

5 PRST (preset search) button ❻❽

6 Display window

7 SEEK/AMS (automatic tuning/Automatic Music Sensor) button ❻❼

8 (radio on/band select) button ❻❼

9 ⏏ (eject) button ❻❾

10 CD (CD play) button ❻

11 RELEASE (front panel release) button ❹❺❾

12 MUTE button ❾

13 Reset button (located on the front side of the unit hidden by the front panel) ❹

14 LOUD (loudness) button ❾

15 During radio reception:
Preset number buttons ❽

During CD playback:

1 INTRO (intro scan) button ❻❾

2 REPEAT (repeat play) button ❻

3 SHUF (shuffle play) button ❼

16 POWER SELECT switch (located on the bottom of the unit)
See "POWER SELECT Switch" in the installation/Connections manual.

17 LCL (local seek mode) ❼

18 MONO (monaural mode) button ❼

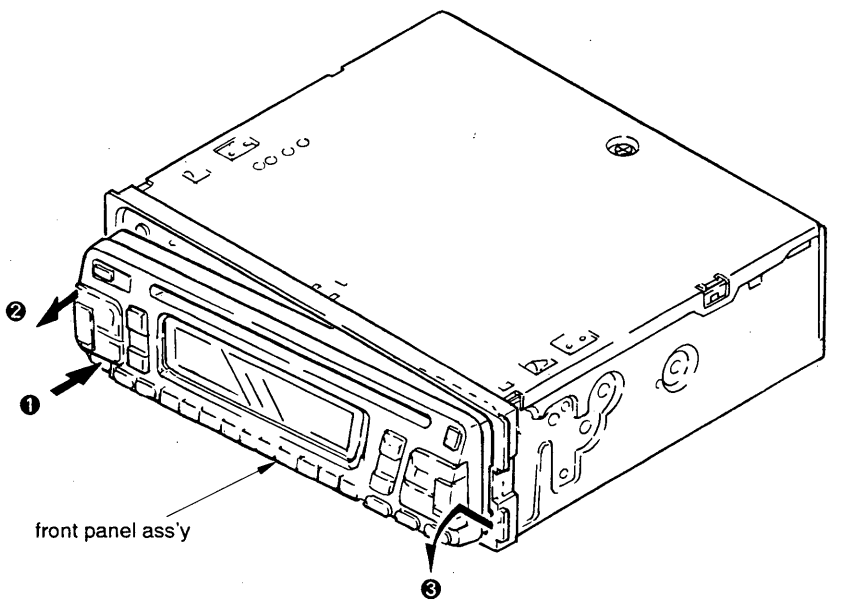
19 BTM (Best Tuning Memory function) button ❽

20 (radio on/band select) button ❻❼

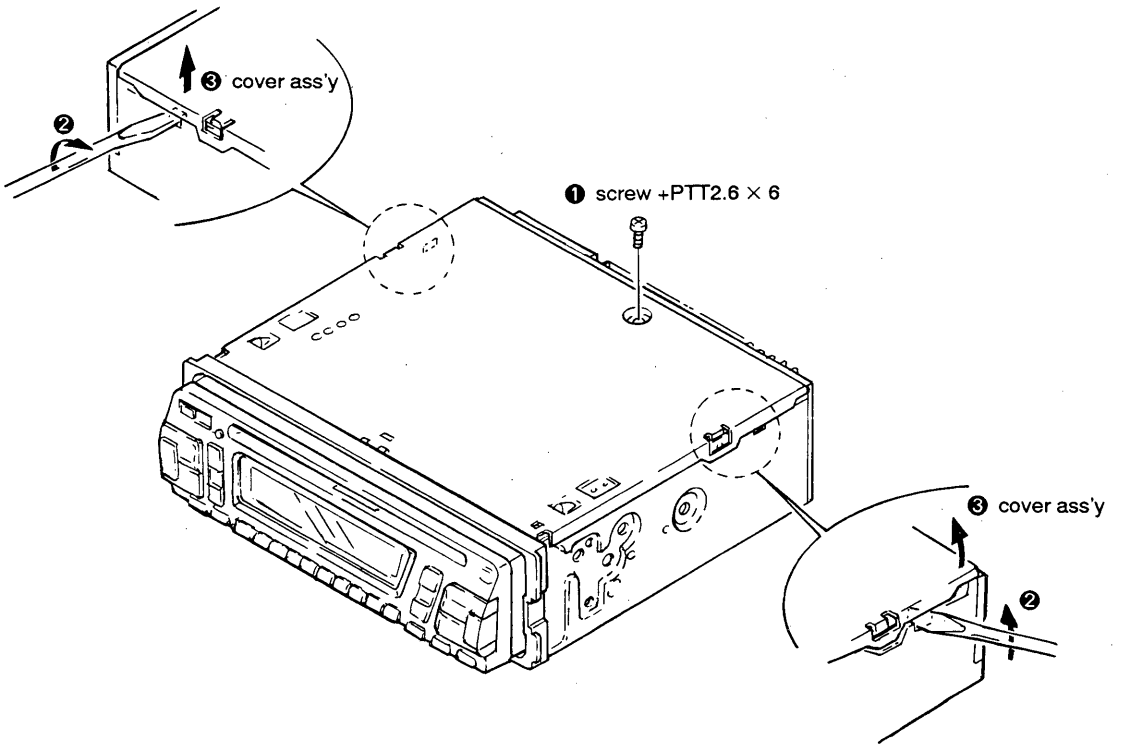
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

FRONT PANEL ASS'Y



COVER ASS'Y



SECTION 3
TEST MODE

Setting:

Method 1

Press keys in order of [4] → [5] → [1] for 2sec. under OFF condition.

Method 2

Pin⑦① of IC501 (SYSTEM CONTROL)→Connected to GND →[RESET] button (S801)

Note: While the TEST MODE is set, the following will be displayed on the LCD.
Bit display "SHUF".

Releasing:

Press [OFF] key, or press [RESET] button (Open pin⑦⑦ of IC501).

LCD display test

All segments of the display are lit up at the beginning of test mode.

Electronic volume test

[+] key :

→ −20dB → −10dB → 0dB →

[−] key : normal operation

[SEL] key :

→ BASS max → BASS min → TREBLE max →
← All center ← LOUD on ← TREBLE min ←

[MUTE] key :

→ BALANCE R → BALANCE L → FADER rear →
← All center ← FADAR front ←

CD SECTION

Audio Measurement Mode

When CD is played, the AUDIO MEASUREMENT MODE turns on.

When "YEDS-18" is played in the measuring mode, only the following Track No. will be played. (BANK function)

Each time the [4] key is pressed, the measuring mode turns on/off cyclically.

Note: AUDIO MEASUREMENT MODE PLAY Track No.
No. 2, 3, 6, 7, 8, 10, 12, 13, 17
(These have been set assuming that YEDS-18 will be used.)

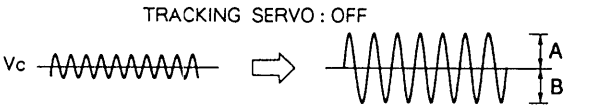
When YEDS-18 is used, the recording signals of the above tracks are as follows.

TNO	CONTENTS	EMPHASIS	PURROSE
2	1kHz Sine Wave 0dB L&R	OFF	Reference
3	20kHz Sine Wave 0dB L&R	OFF	Frequency
6	20kHz Sine Wave 0dB L&R	OFF	Modulation Noise
7	Infinity Zero −∞dB L&R	OFF	S/N
8	1kHz Sine Wave 0dB L	OFF	Channel Separation
10	1kHz Sine Wave 0dB R		
12	5kHz Sine Wave − 4.53dB L&R	ON	De emphasis
13	16kHz Sine Wave − 9.04dB L&R		
17	1kHz Sine Wave − 60dB L&R	OFF	Dynamic Range

Adjusting and Checking Functions

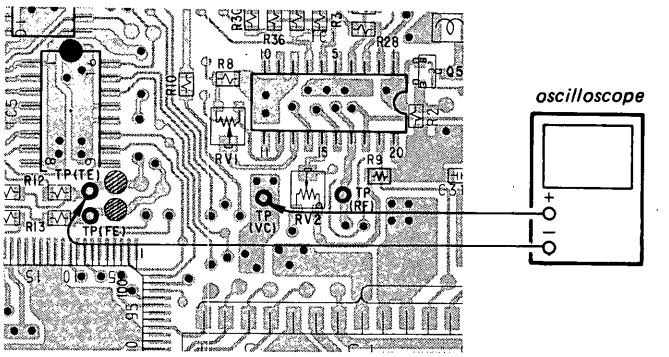
a) TRACKING OFFSET adjustment

Each time the [INTRO] key is pressed while the CD is played, the TRACKING SERVO turns on/off. The bit display "INTRO" on the LCD will be lit while the TRACKING SERVO is off.



Adjustment Location and Measurement point:

【SERVO BOARD】(SIDE B)



Procedure:

Adjust RV1 so that the peak values of waveforms A and B become equal.

b) Focus search retry mode
Each time the [REPEAT] key is pressed while the CD is played, the FOCUS SEARCH RETRY MODE turns on/off.
When the FOCUS does not turn on in the FOCUS SEARCH RETRY MODE, the FOCUS search is repeated. Once the FOCUS turns on, the unit sets into the PLAY condition.
During the FOCUS SEARCH RETRY MODE, the "REP" bit display on the LCD will be lit.

Note: This mode is for checking the unit when FOCUS cannot be set.

CD Error Display

During CD PLAY in the TEST MODE, the following ERROR displays will be shown when CD errors occur.
"E- n1 n2"
n1 to n2 are determined by ERROR symptoms as shown below.

n1	n2
1 : SERVO ERROR	1 : FOCUS ERROR 2 : GFS ERROR 3 : SLED MAX TIME OVER 4 : SLED OVERRUN 5 : TOC READ ERROR
3 : LOADING /EJECT ERROR	1 : MAX TIME OVER (When sensor is passed during loading.) 2 : Loading of only 8cm CD, adaptor, etc. 3 : MAX TIME OVER (Until chucking ends during loading.) 4 : MAX TIME OVER (Until EJECT ends during ejecting.)
4 : TRACK JUMP	1 : FOCUS DOWN 2 : TRACK JUMP 3 : HANG UP
D : TEMP (HOT)	0
F : MD GIVE UP	7 : EJT

TUNER SECTION

When the tuner is turned on in the TEST MODE, all bands will first be set to f_{center}.

SEEK STOP TEST Function

a) When the [SEEK/AMS+ ▶▶|] key is pressed, the unit is set to a frequency − 10 steps from the f_{center} and automatically seeks up to the f_{center}.
- If the unit seek stops at the f_{center} :
  The unit sets into the f_{center} reception state. Preset No. "1" will be displayed.
- If the unit seeks up to the f_{center} and cannot seek stop :
  It returns to the − 10 step frequency and seeks up again.
- If the unit seek stops before the f_{center} :
  The unit receives that frequency. Preset No. "3" will be displayed.

b) When the [SEEK/AMS|◀◀ −] key is pressed, the unit is set to a frequency + 10 steps from the f_{center} and automatically seeks down to the f_{center}.
Hereafter the same as the [SEEK/AMS+ ▶▶|] key.

c) When the [PRST+ ▶▶|] key is pressed, the unit is set to a frequency − 10 steps from the f_{max} and seeks up.
Hereafter the same as a) except that f_{center} is replaced by f_{max}.

d) Press the [PRST |◀◀ −] key to carry out normal Manual seach down operations.

BAND SELECT

During TEST MODE, only the single band can be selected.

AGC CUT Function

In the AM ON condition, this function activates the $\overline{SEEK}$ port (IC603) and cuts AGC.
In the AGC CUT condition, the following displays on the LCD will light up.
Bit display "BANK"

When the [BTM] key is pressed for more than two seconds, AGC CUT turns on/off cyclically.
(The BTM function is unavailable.)

Note: Set the AGC CUT condition when adjusting the AM SEEK STOP sensitivity.
If the band changes from FM to AM, be sure to turn on the AGC CUT.

SD Signal Display
(For adjusting SEEK STOP LEVEL)

If the SD signal becomes high while a certain frequency is being received, after BAND displays such as "FM", "AM", etc. are shown, the following displays will light up.

"3" display

When the SD signal is low, nothing will be shown after the BAND is displayed.

BAND	f_{min}	f_{center}	f_{max}	step(SEEK)	step(MANUAL)
FM	87.5MHz	97.9MHz	107.9MHz	200kHz	200kHz
AM	530kHz	1000kHz	1710kHz	10kHz	10kHz

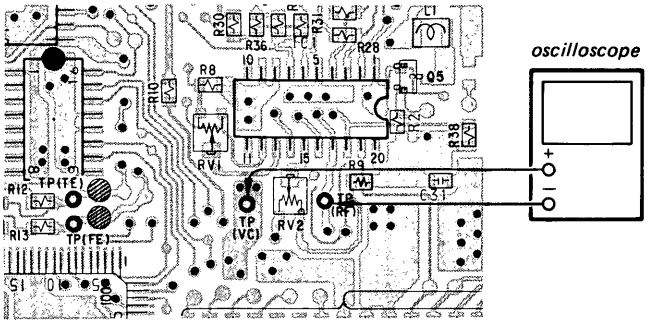
SECTION 4
ELECTRICAL ADJUSTMENTS

CD SECTION

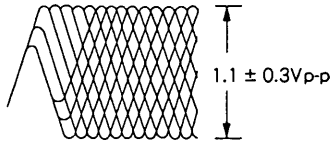
Focus Offset Adjustment

Adjustment Location and Measurement point:

【SERVO BOARD】(SIDE B)



Volt/div : 200mV
Time/div : 0.5 μsec



Procedure:

1. Connect the oscilloscope to test point [RF] on the servo board.
2. Load a disc and set mode to PLAY.
3. Adjust RV2 so that the waveform on the oscilloscope (eye pattern) is maximum with good shape. "Well-shaped eye pattern"means that the mark "◇" is clearly distinguished at the center of the waveform.

Tracking Offset Adjustment

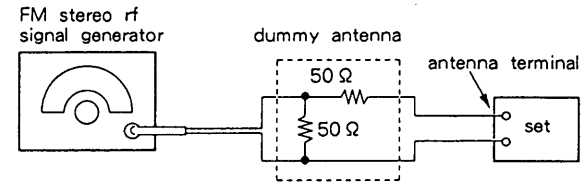
Refer to the "TEST MODE CD SECTION".

TUNER SECTION

FM Seek Stop Level Adjustment (FM SD Adjustment)

Setting:

Band : FM
Frequency : 97.9MHz

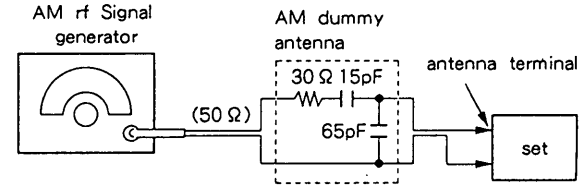


Carrier frequency : 97.9MHz
Modulation : 1kHz, 75kHz
Output level : 22dB (12.6 μ V)

AM Seek Stop Level Adjustment (AM SD Adjustment)

Setting:

Band : AM
Frequency : 1000kHz



Carrier frequency : 1000kHz
Modulation : 400Hz 30 %
Output level : 33dB (44.7 μ V)

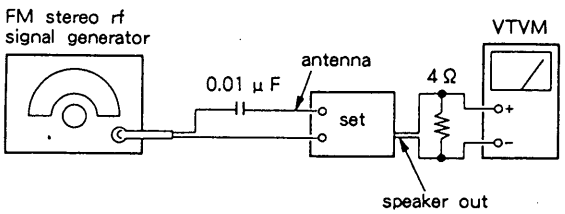
Procedure:

1. Set the "SD Signal Display" MODE of the TEST MODE.
2. Adjust RV3 (FM), RV1 (AM) of the TUNER UNIT, and erase the SD display "3" once.
3. Adjust RV3 (FM), RV1 (AM) so that a SD display lights up again.
4. Check with the "SEEK STOP TEST" function of the TEST MODE.

FM Stereo Separation Adjustment

Setting:

BAND : FM Stereo
Frequency : 97.9MHz



Carrier frequency : 97.9MHz
Modulation : Main channel : 1kHz, 33.75kHz deviation (45 %)
Pilot signal : 19kHz, 7.5kH deviation (10 %)
Sub channel : 1kHz, 33.75kHz deviation (45 %)
Output level : 1mV (More than 35dB)

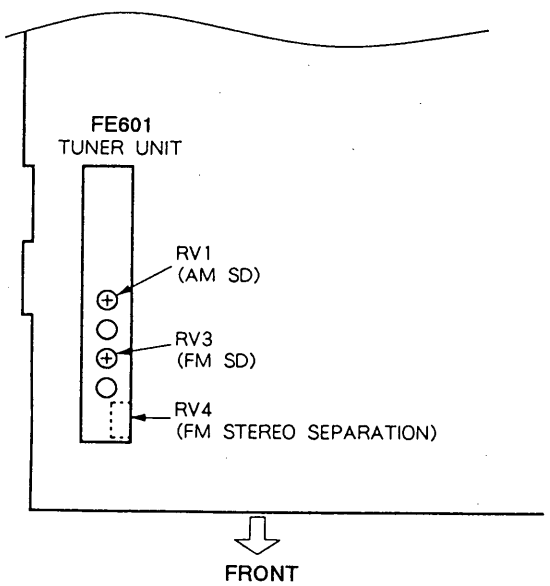
Procedure:

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	ⓐ
R-CH	L-CH	ⓑ Adjust RV4 for minimum reading.
R-CH	R-CH	ⓒ
L-CH	R-CH	ⓓ Adjust RV4 for minimum reading.

Note: The separation values in the two channels should be identical.
ⓐ−ⓑ=ⓒ−ⓓ

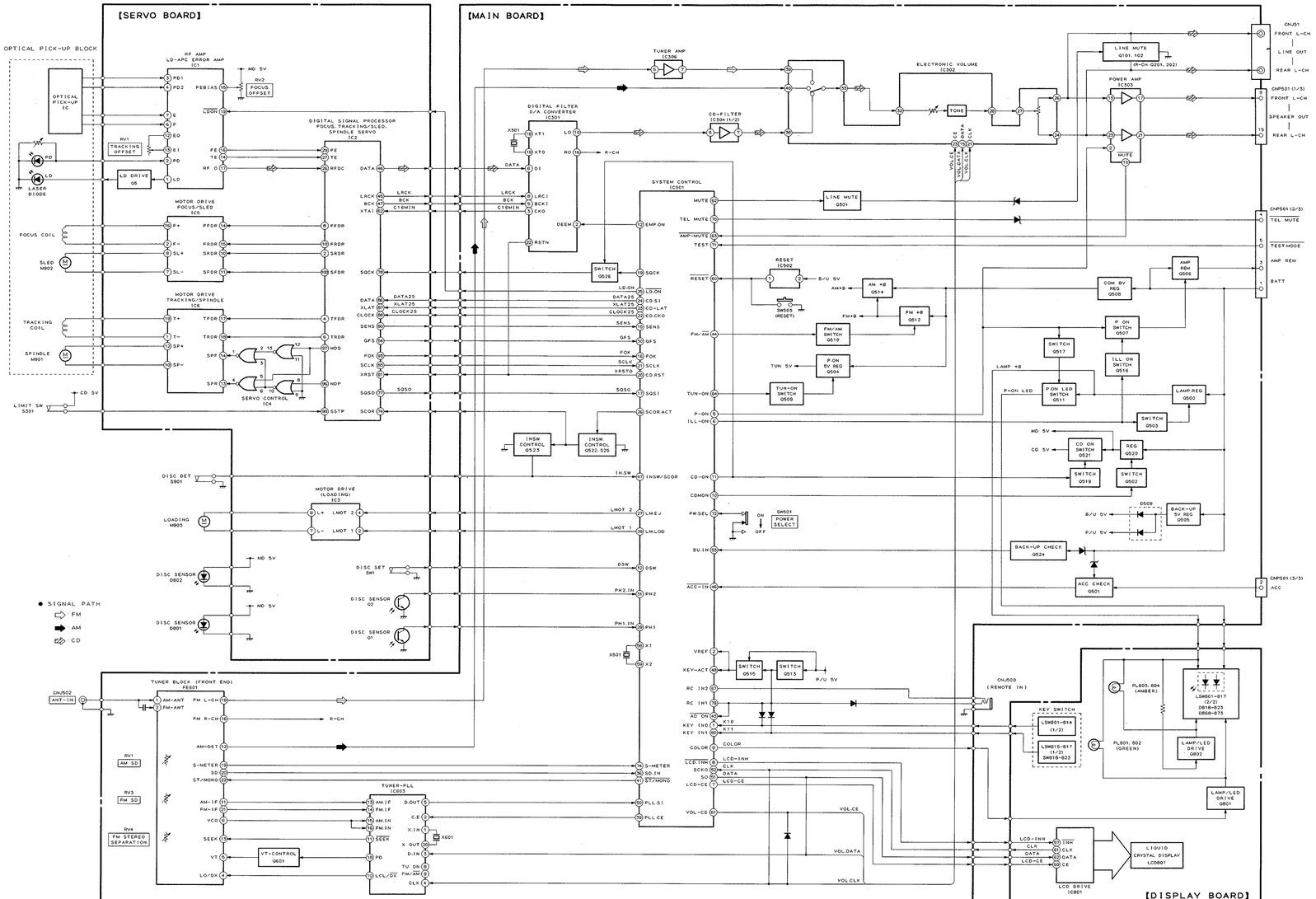
Adjustment Location:

【MAIN BOARD】 (SIDE A)



SECTION 5
DIAGRAMS

5-1. BLOCK DIAGRAM

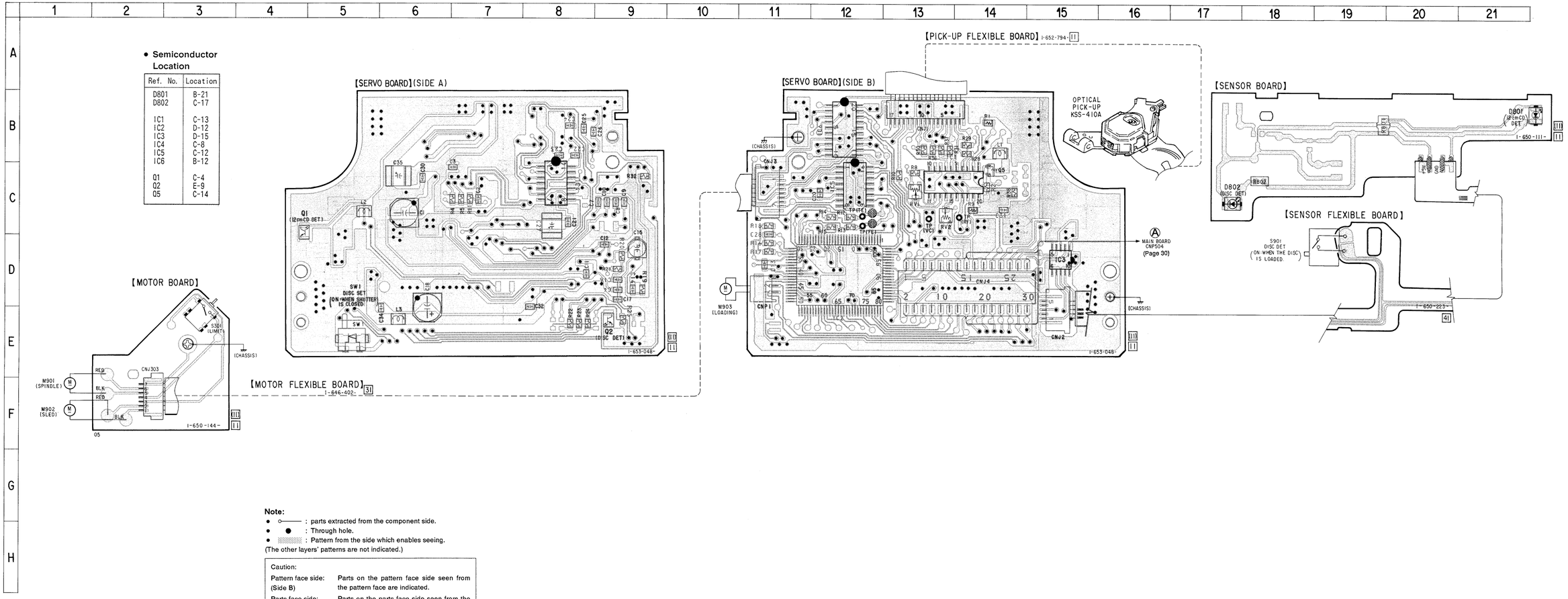


5-2. PRINTED WIRING BOARDS – MECHANISM DECK Section –

• See page 32 for Semiconductor Lead Layouts.

• Semiconductor Location

Ref. No.	Location
D801	B-21
D802	C-17
IC1	C-13
IC2	D-12
IC3	D-15
IC4	C-8
IC5	C-12
IC6	B-12
Q1	C-4
Q2	E-9
Q5	C-14

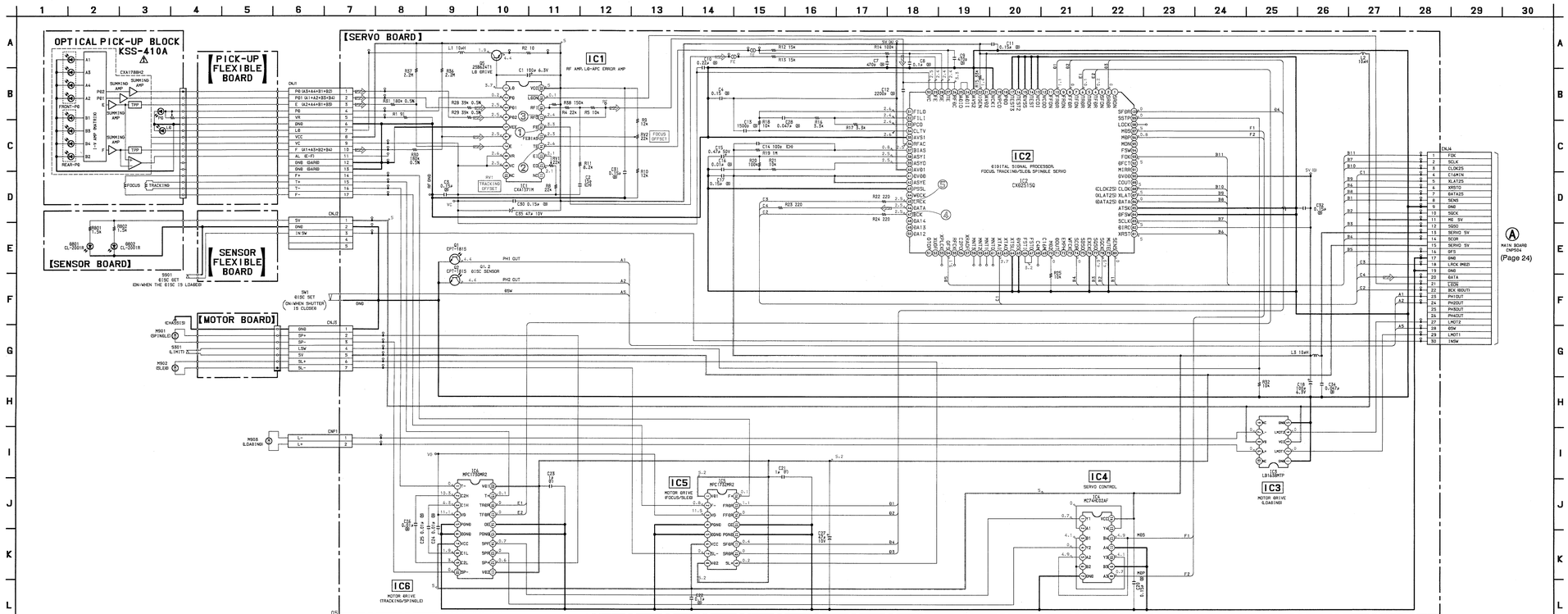


Note:

- ○——: parts extracted from the component side.
- ●: Through hole.
- ▒▒: Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

Caution:	
Pattern face side: (Side B)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A)	Parts on the parts face side seen from the parts face are indicated.



Note:

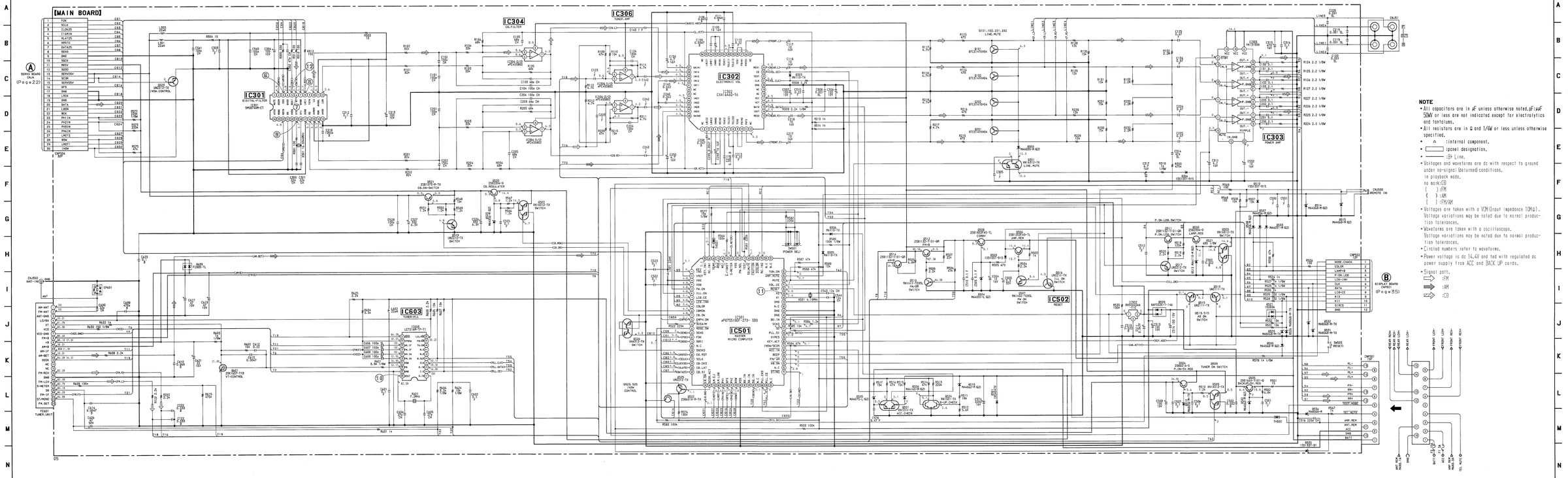
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- ▬▬▬ : B + Line.
- ▭ : adjustment for repair.
- Power voltage is dc 14.4 V and fed with regulated dc power supply from BATT and ACC terminals.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : CD
- Voltages are taken with a VOM (10 MΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD

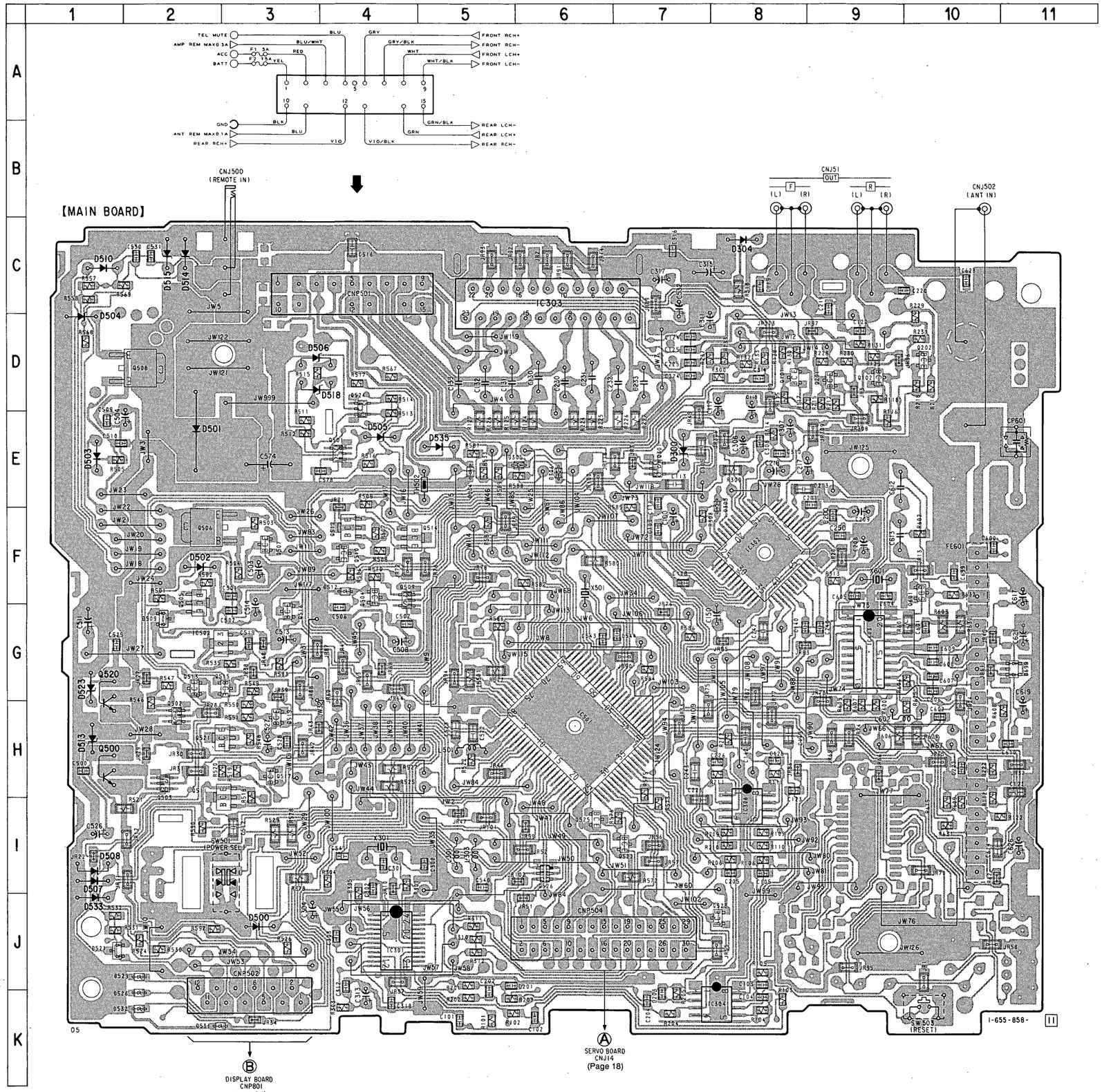
5-4. SCHEMATIC DIAGRAM – MAIN Section –

• See page 37 for IC Block Diagrams.


[MAIN BOARD]
IC301
DIGITAL-IF FILTER
IC302
ELECTRONIC VOL
IC303
POWER AMP
IC304
DB-FILTER
IC306
TUNER AMP
IC501
MASTER MIXING COMPUTER
IC502
RESET
IC603
TUNER-PLL
NOTE
• All capacitors are in μF unless otherwise noted. pF: μμF
50WV or less are not indicated except for electrolytics and tantaliums.
• All resistors are in Ω and 1/4W or less unless otherwise specified.
• : Internal component.
• : Panel designation.
• : +B Line.
• Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
In playback mode.
no mark: CD
( ) : FM
{ } : AM
[ ] : FM/AM
• Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
• Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
• Circled numbers refer to waveforms.
• Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BACK UP cords.
• Signal path.
: FM
: AM
: CD

5-5. PRINTED WIRING BOARD – MAIN Section –

• See page 32 for Semiconductor Lead Layouts.



Note:

- ○——— : parts extracted from the component side.
- △ : internal component.

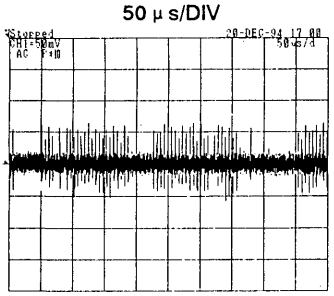
• Semiconductor Location

Ref. No.	Location
D300	E-7
D303	F-8
D304	C-8
D305	E-6
D306	E-6
D500	J-3
D501	E-2
D502	F-2
D503	E-1
D504	D-1
D505	E-4
D506	D-3
D507	I-1
D508	I-1
D509	G-2
D510	C-1
D512	F-4
D513	H-1
D514	C-2
D515	C-2
D518	D-3
D521	J-1
D523	G-1
D526	K-2
D529	J-2
D531	K-2
D532	K-2
D533	J-1
D534	E-5
D535	E-5
D699	G-11
IC301	J-4
IC302	F-8
IC303	C-6
IC304	K-8
IC306	I-8
IC501	H-6
IC502	G-2
IC603	G-9
Q101	D-8
Q102	D-9
Q201	D-9
Q202	D-10
Q301	E-7
Q500	H-1
Q501	E-4
Q502	H-2
Q503	H-2
Q504	F-4
Q505	F-2
Q506	F-2
Q507	F-3
Q508	D-2
Q509	F-4
Q510	F-4
Q511	H-2
Q512	F-4
Q513	G-2
Q514	F-4
Q515	G-3
Q516	G-3
Q517	H-3
Q519	H-3
Q520	G-1
Q521	H-2
Q522	I-7
Q523	J-8
Q524	D-4
Q525	I-6
Q526	I-6
Q601	F-10

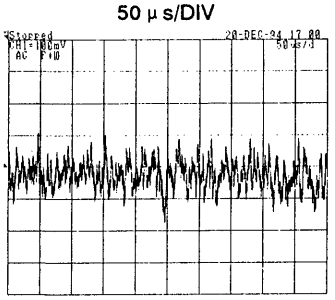
• Waveforms

Servo Board

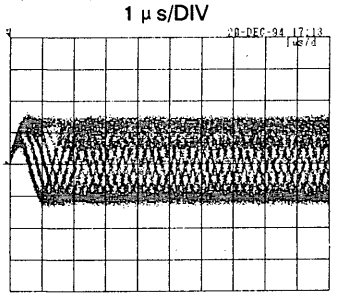
❶ IC1 ⑯ 50mV/DIV
50 μ s/DIV



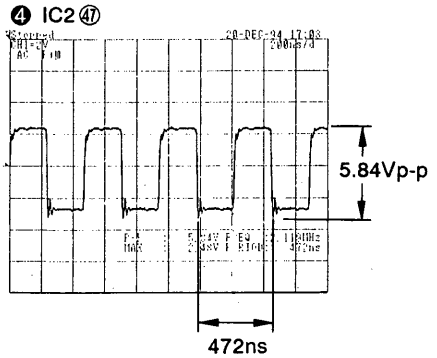
❷ IC1 ⑭ 100mV/DIV
50 μ s/DIV



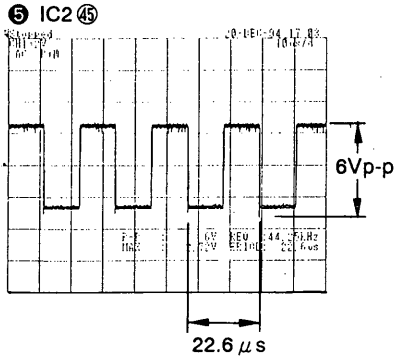
❸ IC1 ⑰ 0.5V/DIV
1 μ s/DIV



❹ IC2 ㊼

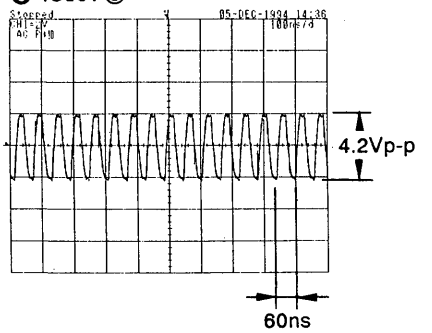


❺ IC2 ㊺

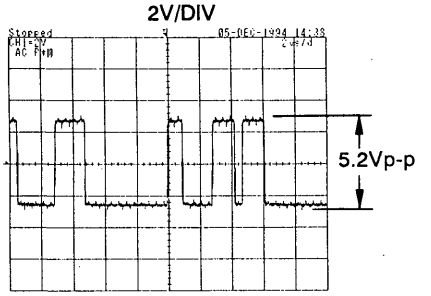


Main Board

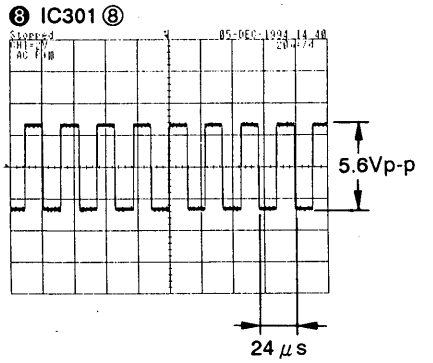
❻ IC301 ③



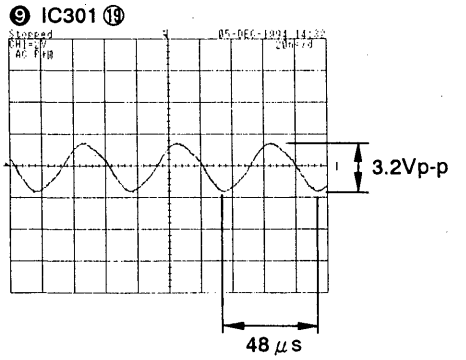
❼ IC301 ⑥ 100ns/DIV
2V/DIV



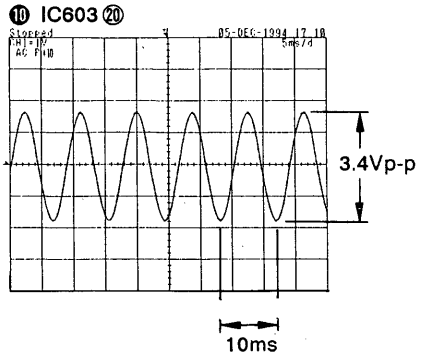
❽ IC301 ⑧



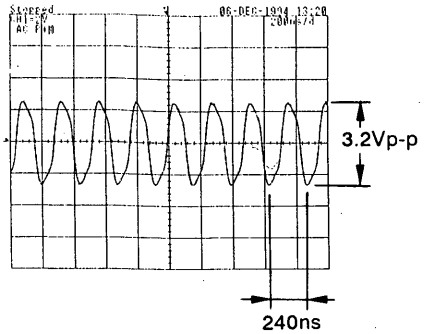
❾ IC301 ⑲



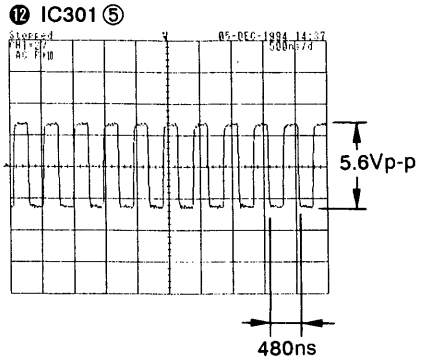
❿ IC603 ⑳



⓫ IC501 ㊾

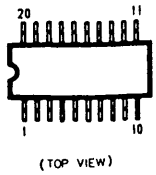


⓬ IC301 ⑤



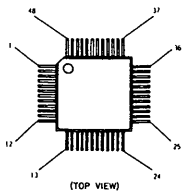
• Semiconductor Lead Layouts

CXA1571M
MPC1730MR2



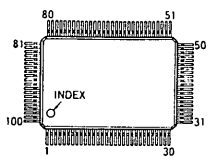
(TOP VIEW)

CXA1646Q



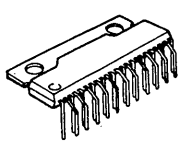
(TOP VIEW)

CXD2515Q

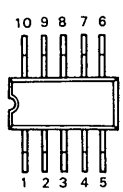


(TOP VIEW)

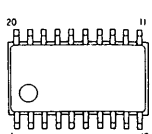
HA1350A



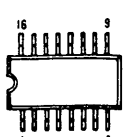
LB1638M



LC7216M

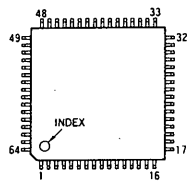


MPC1732MR2



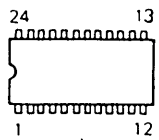
(TOP VIEW)

NJU6432BFD1



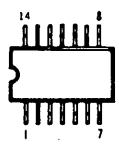
(TOP VIEW)

SM5874AM-ET



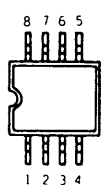
(Top view)

SN74HC02ANS



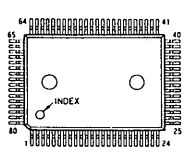
(TOP VIEW)

UPC4558G2



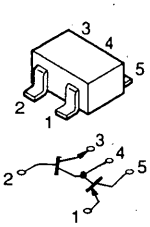
(TOP VIEW)

UPD75518GF-270-3B9

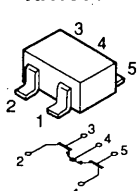


(TOP VIEW)

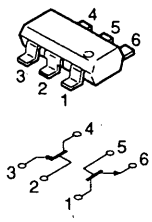
XN1A312-TX



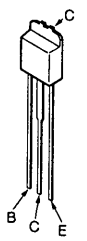
XN1211
XN1501



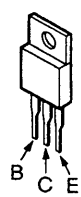
XN4312



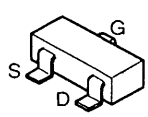
2SB1202FAS



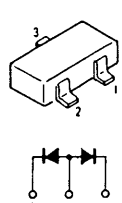
2SD2394-G



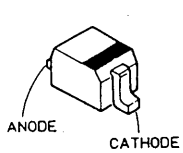
2SK1657-T1B



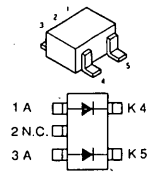
DAP202K
1S2836



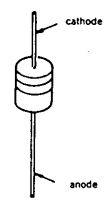
DTZ5.6B
DTZ6.8B
MA110



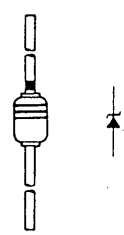
FC805



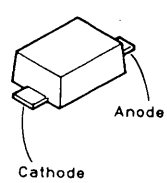
MA4039 (QZ)
MA4056-M (QZ)
MA4062-M (QZ)
MA4160-M (QZ)
RD6.8ES-B2
1SS133T-91S



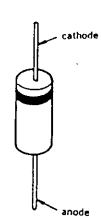
MA4051-M (QZ)
MA4075-L (QZ)
MA4091-L (QZ)
MA4110-M (QZ)



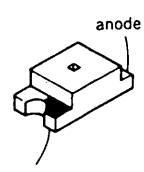
MA8051-H
MA8091-M



1N5404TU



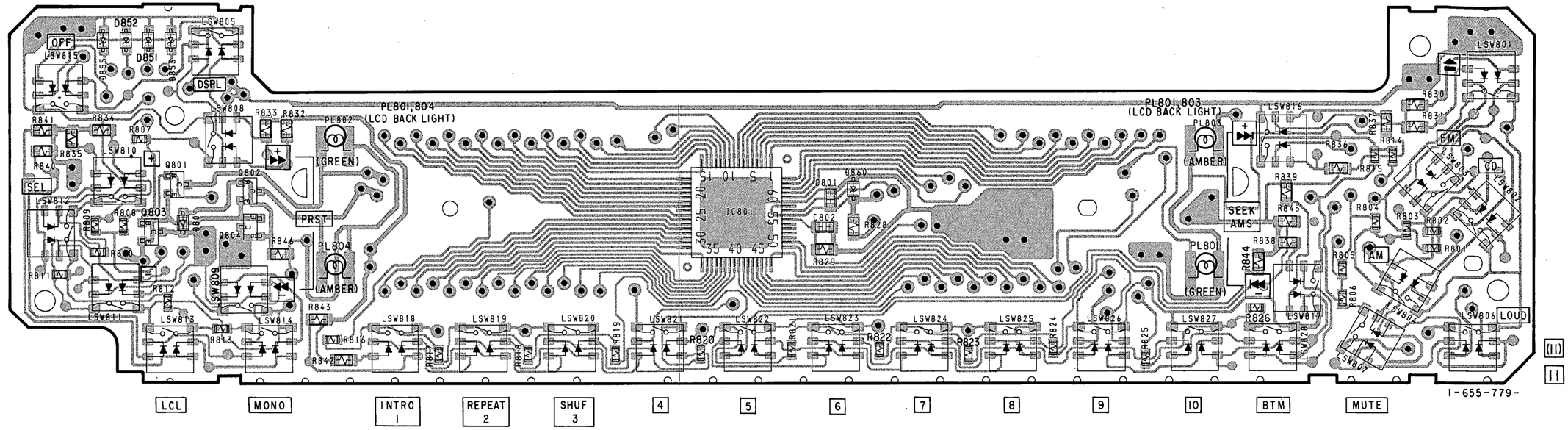
CL200IR-X-TU



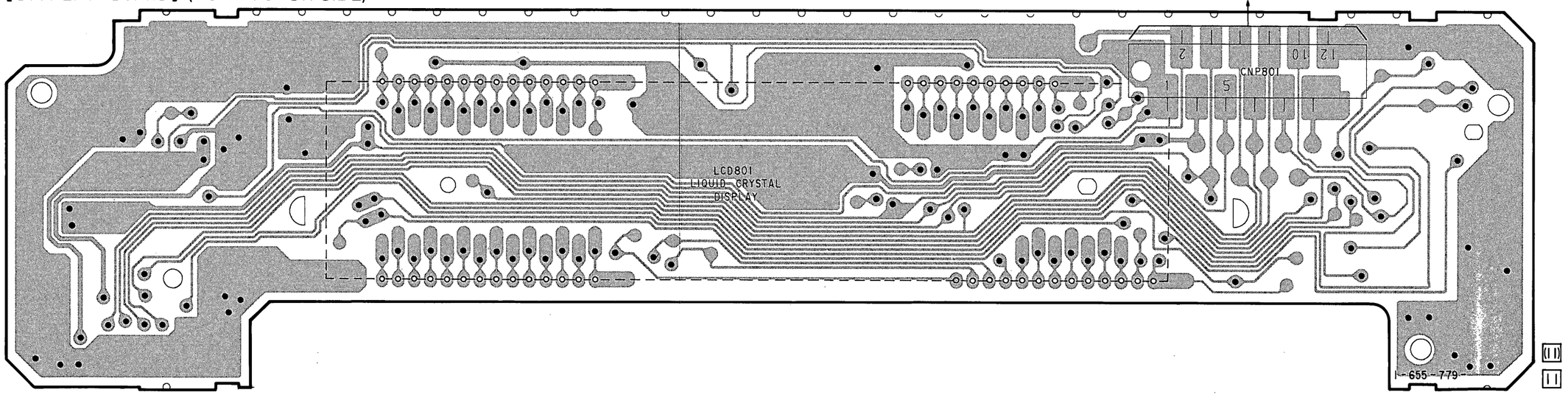
- **Semiconductor Location**

Ref. No.	Location
D801	D-3
D851	B-3
D852	B-3
D853	B-3
D855	B-2
D860	D-12
IC801	D-11
Q801	D-3
Q802	D-4
Q803	E-3
Q804	D-4

【DISPLAY BOARD】(COMPONENT SIDE)



【DISPLAY BOARD】(CONDUCTOR SIDE)



05

Note:

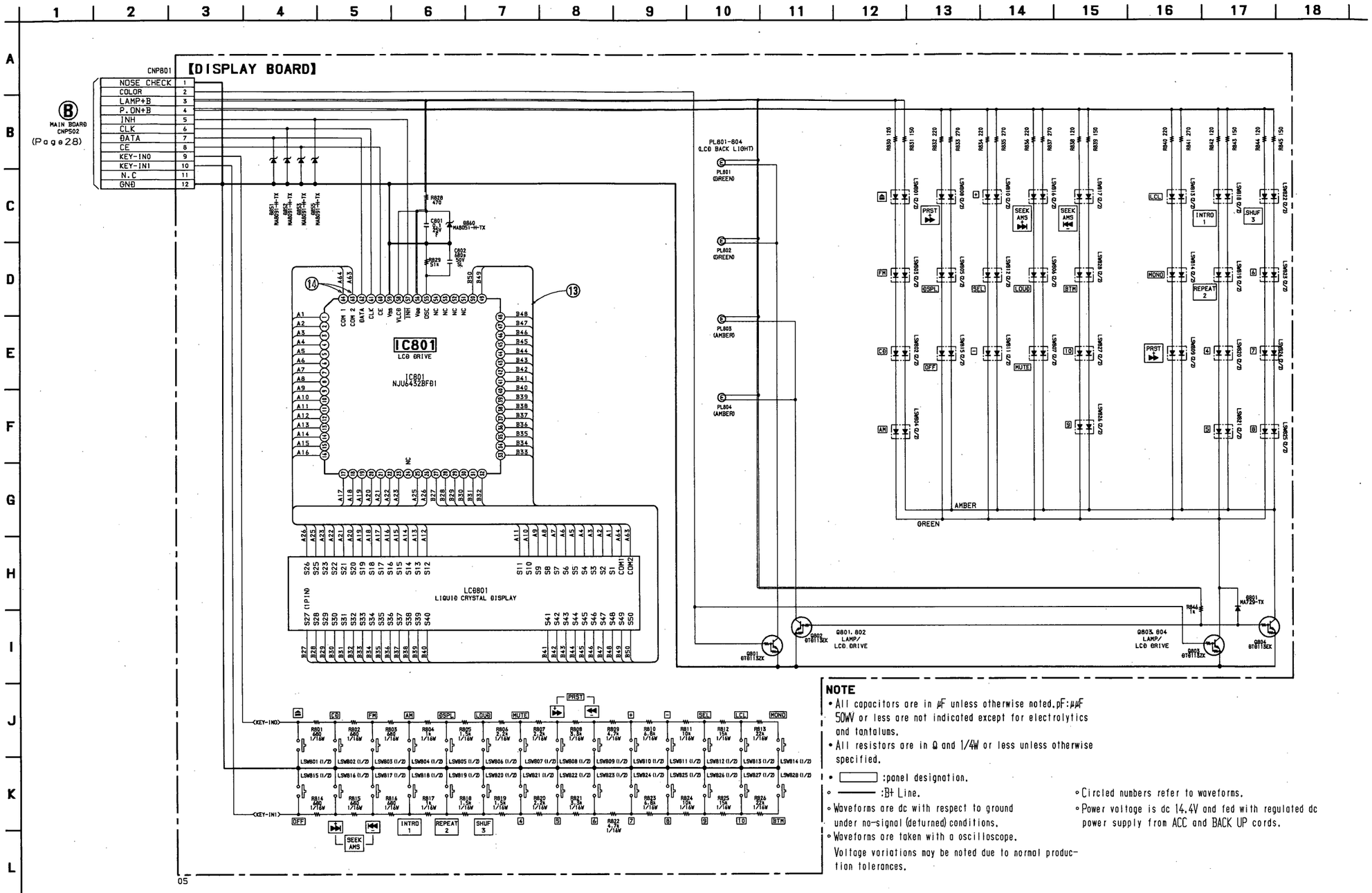
- ○—— : parts extracted from the component side.
- ● : Through hole.
- ▒▒ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

5-7. SCHEMATIC DIAGRAM – DISPLAY Section –

• See page 37 for IC Block Diagrams.

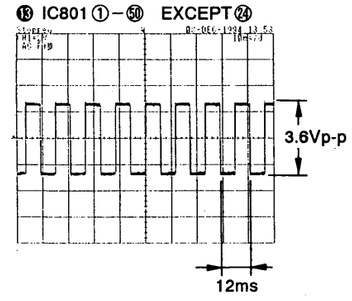


NOTE

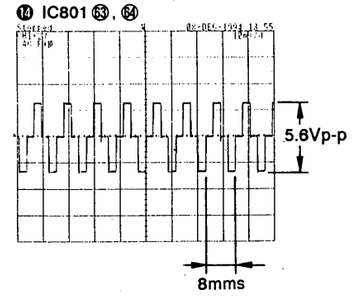
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- ▭ : panel designation.
- ——— : B+ Line.
- Waveforms are dc with respect to ground under no-signal (deturned) conditions.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BACK UP cords.

• Waveforms

⑬ IC801 ① – ㊿ EXCEPT ㉔

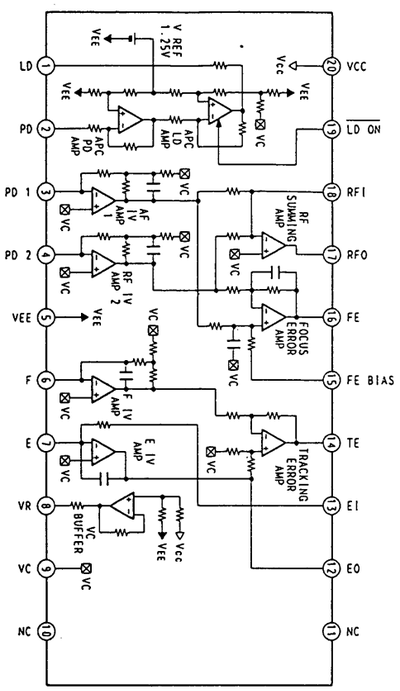


⑭ IC801 ㊸, ㊹

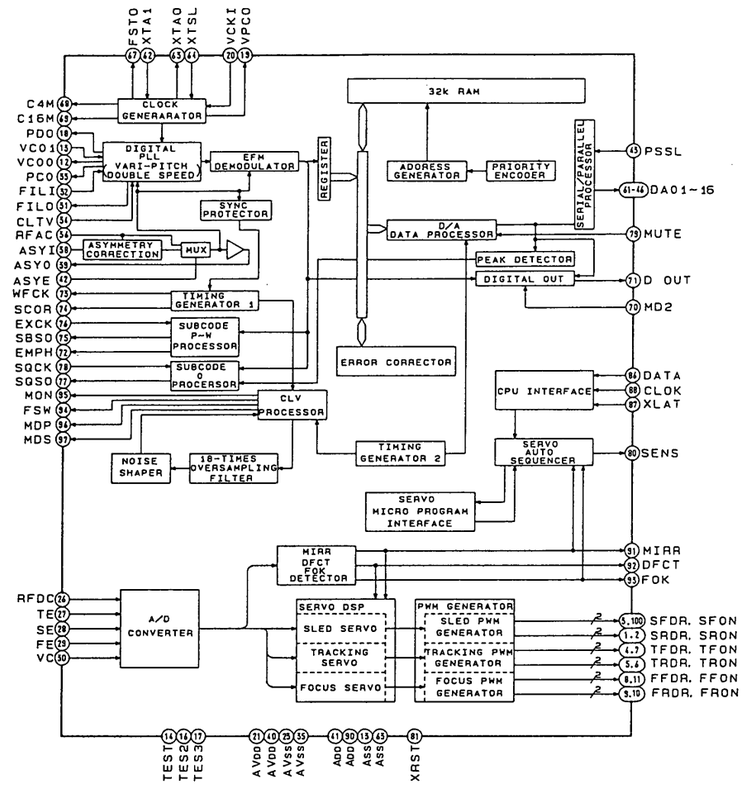


• **IC Block Diagrams**

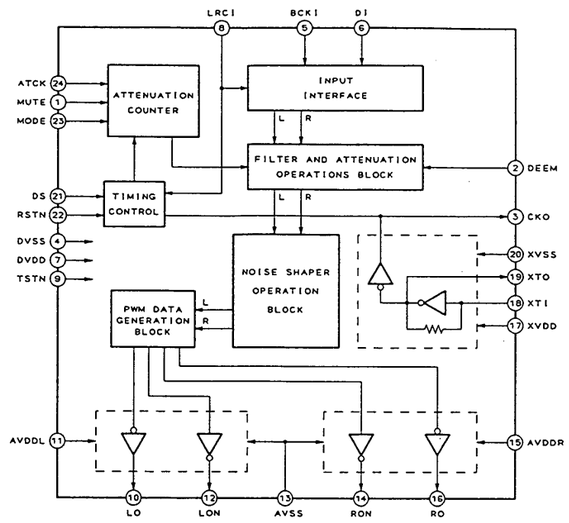
IC1 CXA1571M (SERVO BOARD)



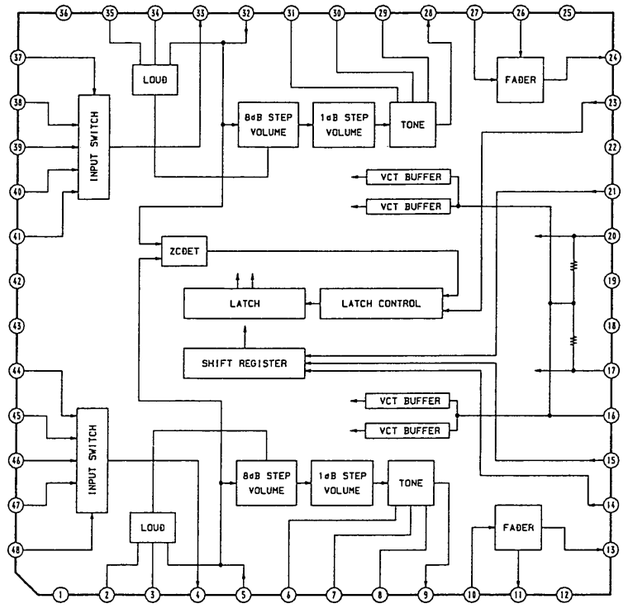
IC2 CXD2515Q (SERVO BOARD)



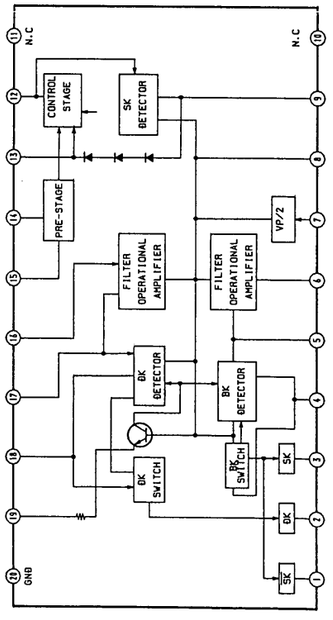
IC301 SM5874AM-ET (MAIN BOARD)



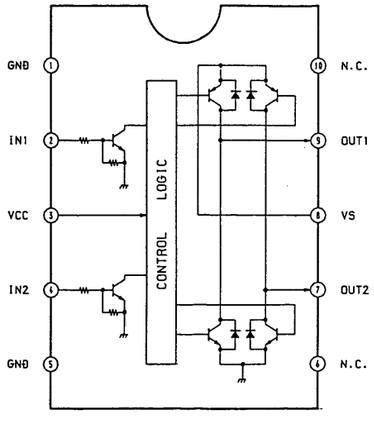
IC302 CXA1646Q (MAIN BOARD)



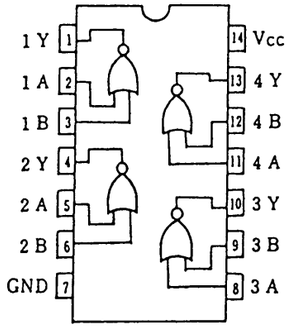
IC650 TDA1579T (MAIN BOARD)



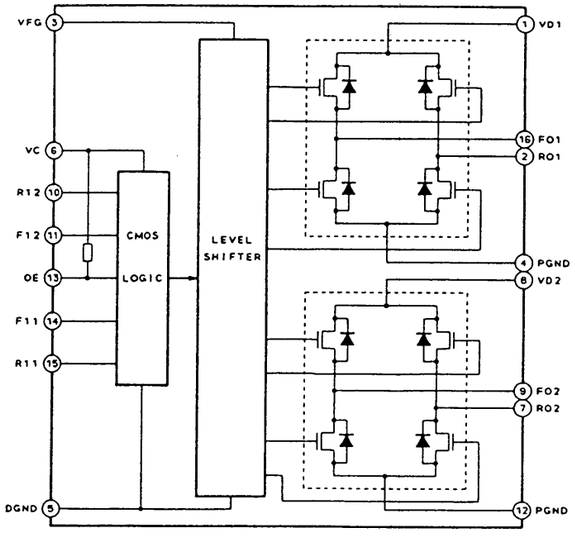
IC3 LB1638M (SERVO BOARD)



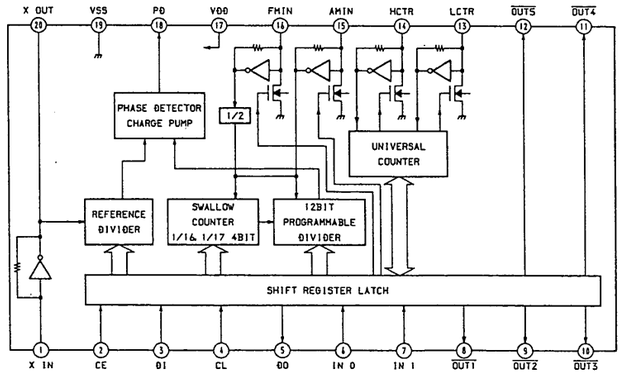
IC4 SN74HC02ANS (SERVO BOARD)



IC5 MPC1732MR2 (SERVO BOARD)
IC6 MPC1730MR2 (SERVO BOARD)



IC603 LC7216M (MAIN BOARD)



5-8. IC PIN DESCRIPTION

• IC501 SYSTEM CONTROL (μPD75518GF-270-3B9)

Pin No.	Pin Name	I/O	Description
1	KEY IN0	I	Key input pin. (A/D conversion input.)
2	VREF	I	Reference voltage input pin of A/D conversion pins.
3	VDD	I	Power supply input. (5 V)
4	VDD	I	
5	PW ON	O	ON/OFF control pin of the system power supply. "H" : ON
6	ILL ON	O	Illumination power supply control output pin. "H" : ON
7	LCD CE	O	Pin which outputs CE to the LCD driver IC.
8	$\overline{\text{LCD INH}}$	O	Pin which outputs INH to the LCD driver IC.
9	COLOR	O	Output pin for switching lighting colors. (AMBER/GREEN)
10	CD ON	O	Power supply ON/OFF control output pin. (Mechanism deck section)
11	CD ON	O	Power supply ON/OFF control output pin. (CD servo IC)
12	$\overline{\text{EMPH ON}}$	O	Outputs "L" when a DISC which has been pre-emphasized is played back.
13	305X/M	I	Timer value on eject end setting.
14	$\overline{\text{NOSE SW}}$	I	Front panel Ass'y removal and attaching detection. "L" : Attached
15	SENS	I	SENS input pin form CD servo IC.
16	FOK	I	FOK input pin form CD servo IC.
17	SQSI	I	CD Q data input pin.
18	N.C	—	Not used.
19	SQCKO	O	CLOCK output pin for reading the Q DATA.
20	CD RST	O	CD servo IC resetting output pin.
21	SCLK	O	SERIAL CLOCK output pin.
22	CD CKO	O	SERIAL CLOCK output pin for the CD servo IC.
23	CD LAT	O	SERIAL DATA LATCH output pin for the CD servo IC.
24	CD SO	O	SERIAL DATA output pin for the CD servo IC.
25	LD ON	O	CD servo system power supply control.
26	SCOR ACT	O	Activate for SCOR line.
27	LM EJ	O	Loading motor control output pin. (Eject direction)
28	LM LOD	O	Loading motor control output pin. (Loading direction)
29	PH1	I	Mechanism deck sensor (loading /eject) input pin.
30	GFS	I	GFS input pin form CD servo IC.
31	PH2	I	Mechanism deck sensor (loading /eject) input pin.
32	DSW	I	Mechanism deck sensor input pin. Detects the completion of the DISC chucking operation.
33	VSS	—	Connected GND.
34	DK IN	I	DK input. (German model)
35	SK IN	I	SK input. (German model)
36	SD IN	I	SD input pin.
37	N.C	—	Not used.
38	PLL CKO	O	SERIAL CLOCK output pin for the PLL IC.
39	PLL CE	O	Chip enable output pin for the PLL IC.
40	N.C	—	Not used.
41	ST/$\overline{\text{MO}}$	O	Output pin for switching control STEREO/MONO.
42	N.C	—	Not used.
43	AD/ON	O	VREF control pin of A/D conversion pins.

Pin No.	Pin Name	I/O	Description
44	FM/AM	O	FM/AM select. "H" : FM, "L" : AM
45	BEEP	O	Alarm drive output pin.
46	$\overline{\text{ACC IN}}$	I	ACC line ON/OFF detection. "L" : ACC ON
47	IN SW/SCOR	I	CD PLAY: SCOR input pin. Others: MD roller open/close detect input.
48	KEY ACK	I	Key input acknowledage.
49	SIRCS	I	SIRCS signal input pin.
50	PLL SI	I	SERIAL DATA input pin.
51	SO	O	SERIAL DATA output pin for controlling LCD driver, tuner PLL, electronic VOL ICs.
52	SCKO	O	SERIAL CLOCK output pin for controlling LCD driver, tuner PLL, electronic VOL ICs.
53	BU IN	I	BATT line ON/OFF detection.
54	GND	—	GND.
55	GND XT1	—	GND.
56	N.C	—	Not used.
57	GND	—	GND.
58	X1	—	The SYSTEM CLOCK (4.19 MHz) for system control IC.
59	X2	—	
60	$\overline{\text{RESET}}$	I	Input pin for system reset. "L" : Reset
61	VOL CE	O	Chip enable output pin to the electronic VOL IC.
62	MUTE	O	Audio MUTE output pin. "H" : Mute
63	$\overline{\text{AMP-MUTE}}$	O	MUTE output pin for power amp IC.
64	TUN ON	O	Tuner system power supply control.
65	N.C	—	Not used.
66	N.C	—	Not used.
67	RC IN2	I	Rotary commander shift key input.
68	2COLOR	I	One color/Two color select. "L" : 2 color "H" : 1 color
69	CAUTION	I	Alarm fnction is built in or not select. "L" : Built in
70	TEL MUTE	I	Telephone MUTE input pin.
71	TEST	I	When dropped to "L", TEST MODE will be set.
72	PW SEL	I	Power select SW input pin.
73	VSS	—	Connected to GND.
74	S-METER	I	S meter voltage detection pin.
75	6/10 KEY SEL	I	6 keys/10 keys select. "L" : 6 key, "H" : 10 key
76	MS1	I	Destination of tuner setting input pin.
77	MS0	I	
78	TEMP	I	Thermistor voltage for temperature detection input.
79	RC IN1	I	Rotay commander shift key input.
80	KEY IN1	I	Key input pin (A/D conversion input)

MS1 \ MS0	0	1/2VDD	VDD
0	USA	AE SW, ARI	AE LW, ARI
1/2VDD	E 9K	AE ARI	E 10K
VDD	AE LW	J TV1 – 3ch	AE

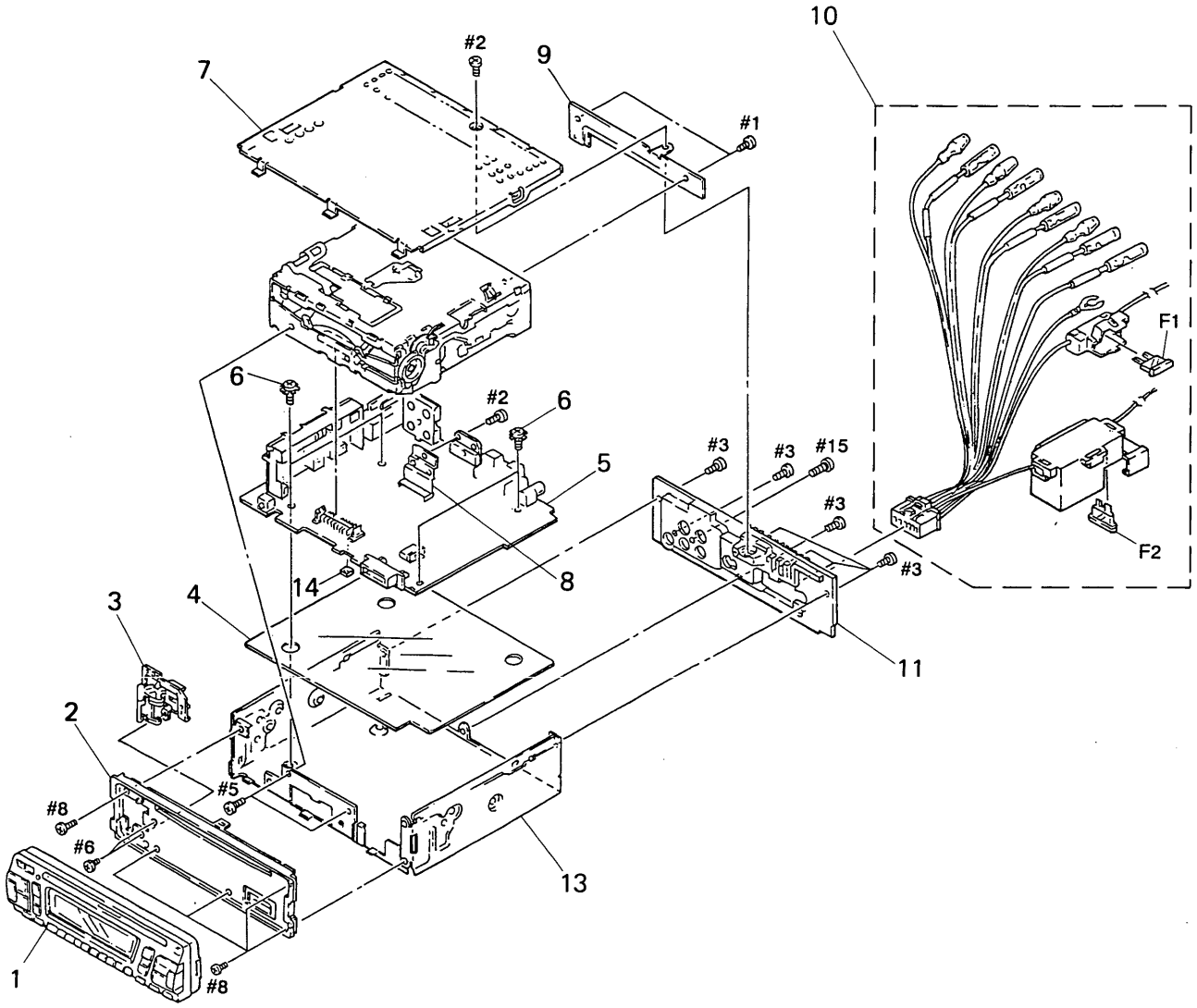
SECTION 6
EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

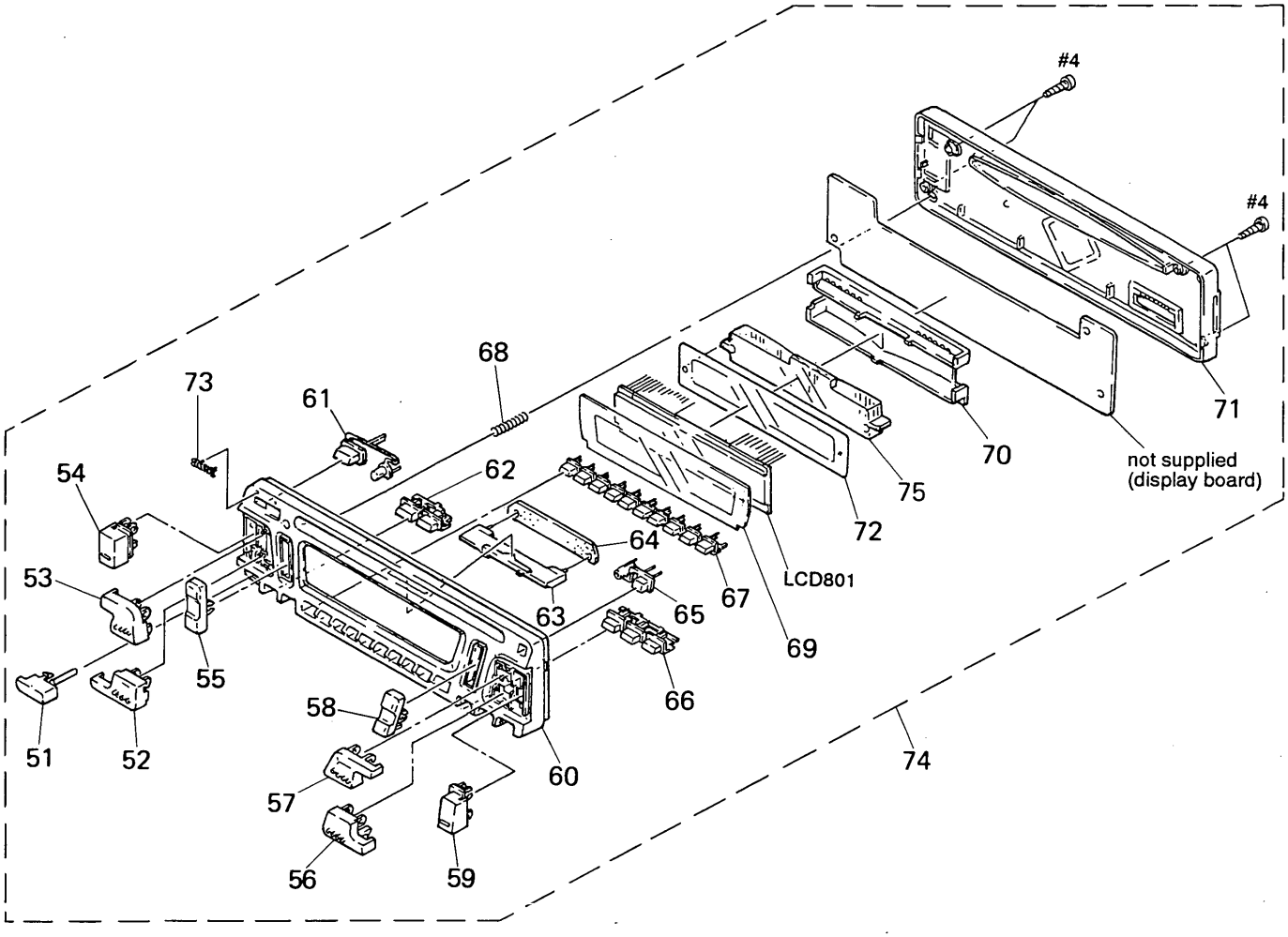
(1) GENERAL SECTION



Ref. No.	Part No.	Description	Remark
* 1	A-3291-330-A	PANEL ASSY, FRONT	
2	X-3369-910-1	PANEL ASSY, SUB	
3	X-3367-636-1	LOCK ASSY	
* 4	3-921-921-01	SHEET, INSULATING	
* 5	A-3222-878-A	MAIN BOARD, COMPLETE	
6	3-915-923-01	SCREW, GROUND POINT	
* 7	X-3369-912-1	COVER ASSY	
* 8	3-921-888-01	BRACKET (IC)	
* 9	3-909-336-01	BRACKET (MD)	
10	1-769-773-11	CORD (WITH CONNECTOR)	
* 11	3-921-923-11	HEAT SINK	
* 13	3-921-920-01	CHASSIS (MAIN)	
14	9-911-844-XX	SPACER, MOTOR	
F1	1-533-326-11	FUSE (BLADE TYPE) (AUTO FUSE) 3A	
F2	1-533-331-11	FUSE (BLADE TYPE) (AUTO FUSE) 15A	

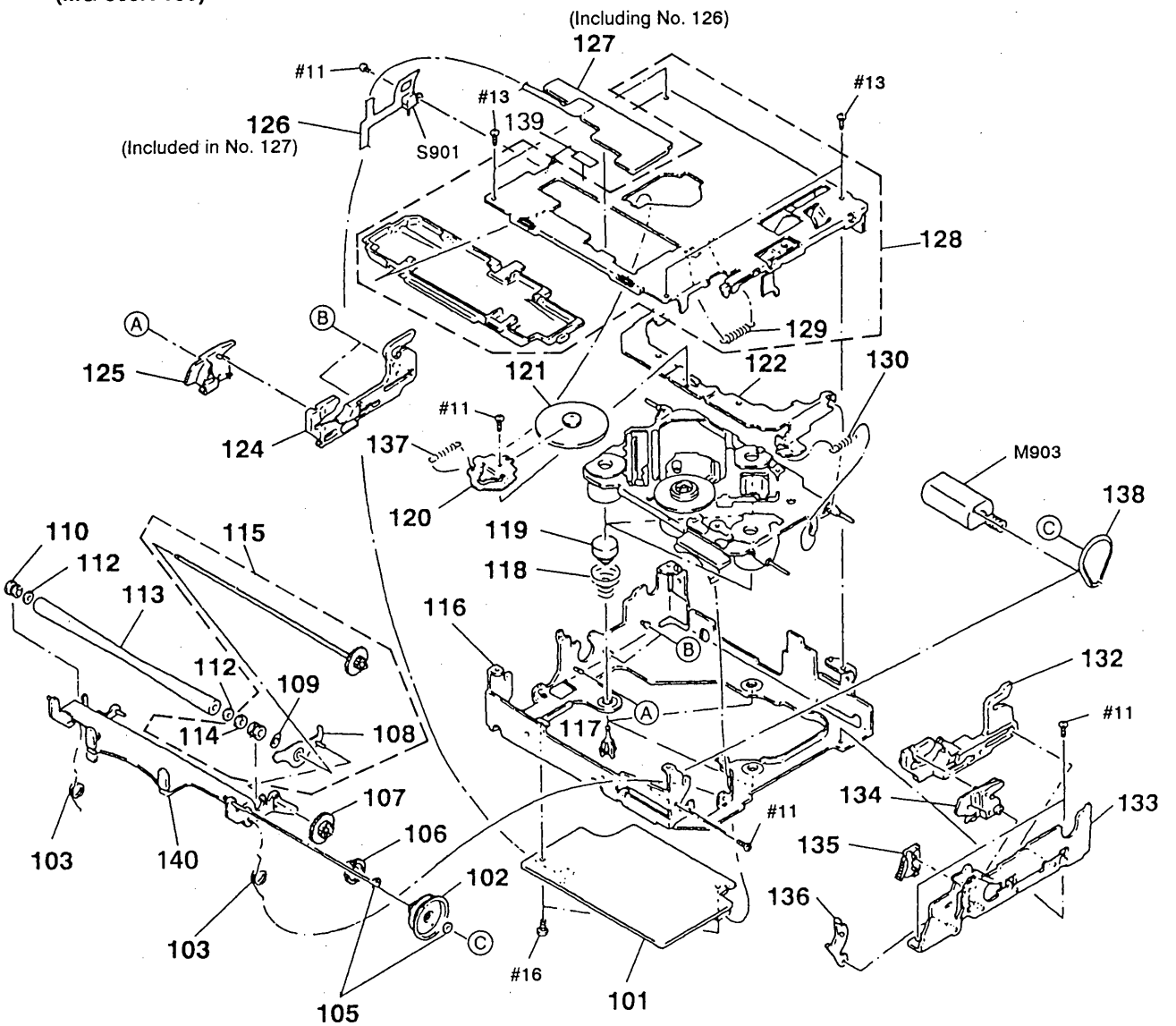
(2) FRONT PANEL SECTION

SEE ADDITIONAL INFORMATION



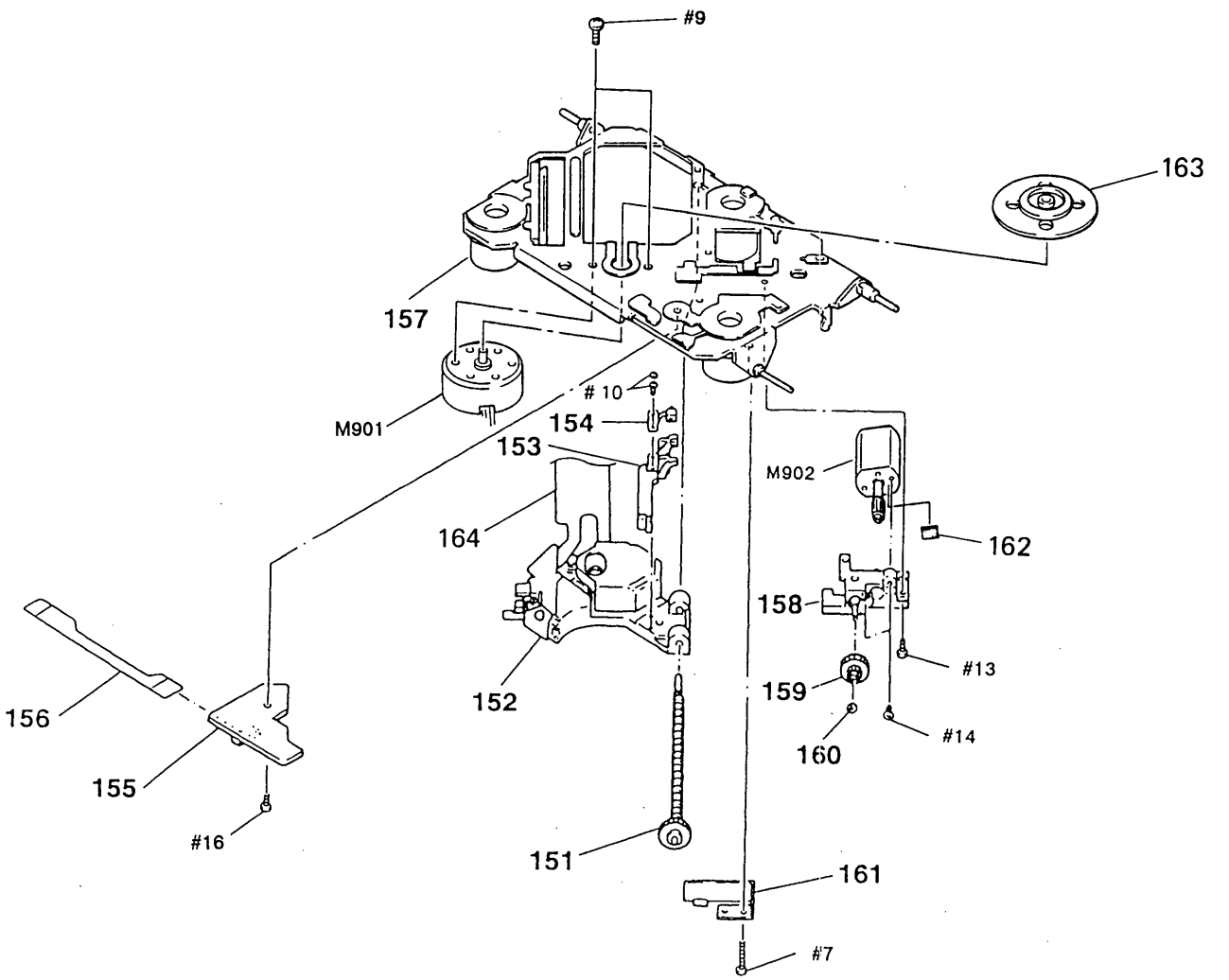
Ref. No.	Part No.	Description	Remark
51	3-921-827-01	BUTTON (RELEASE)	
52	3-919-354-01	BUTTON (-)	
53	3-919-365-01	BUTTON (+)	
54	3-919-364-01	BUTTON (SEL)	
55	3-921-843-01	BUTTON (PRST)	
56	3-921-847-31	BUTTON (TV) (AM)	
57	3-921-845-11	BUTTON (TUNER) (FM)	
58	3-919-356-01	BUTTON (SEEK) (SEEK AMS)	
59	3-921-846-11	BUTTON (CD)	
60	3-921-844-31	PANEL, FRONT	
61	3-921-839-01	BUTTON (OFF)	
62	3-921-829-21	BUTTON (2 GANG) (MUTE/LOUD)	
* 63	3-921-825-01	PLATE (C), LIGHT GUIDE	
64	3-909-313-01	SHEET (DOOR F)	
65	3-921-830-01	BUTTON (EJECT) (⏏)	
66	3-921-828-11	BUTTON (3 GANG) (LCL/MONO/BTM)	
67	3-921-826-01	BUTTON (10 KEY) (1/2/3/4/5/6/7/8/9/10)	
68	3-914-590-01	SPRING (R2)	
69	3-921-824-11	PLATE (WINDOW), INDICATION	
* 70	3-921-822-01	HOLDER (LCD)	
71	3-921-842-01	PANEL, FRONT BACK	
* 72	3-921-850-11	ILLUMINATOR (LCD)	
73	3-904-194-01	EMBLEM (NO. 2.5), SONY	
* 74	A-3291-330-A	PANEL ASSY, FRONT	
* 75	3-921-823-01	PLATE (LCD), LIGHT GUIDE	
LCD801	1-810-847-11	DISPLAY PANEL, LIQUID CRYSTAL	

(3) MECHANISM DECK SECTION-1
(MG-305X-130)



Ref. No.	Part No.	Description	Remark
101	A-3298-222-A	SERVO BOARD, COMPLETE	
102	3-384-894-02	GEAR (R1)	
103	3-384-900-01	SPRING (PRESS)	
105	3-578-242-11	WASHER	
106	3-384-895-01	GEAR (R2)	
107	3-384-896-02	GEAR (DOWN)	
108	X-3366-858-3	ARM ASSY, FRICTION	
109	3-384-899-01	SPRING (FRICTION)	
110	3-384-892-01	BEARING (ROLLER)	
112	3-701-438-11	WASHER, 2.5	
113	3-323-231-11	ROLLER (LOWER)	
114	3-386-150-01	RING (ROLLER), RETAINING	
115	A-3252-591-A	GEAR ASSY, ROLLER	
116	X-3366-852-1	CHASSIS (M) ASSY	
117	3-384-923-02	SHAFT (DAMPER)	
118	3-384-916-01	SPRING (FL)	
119	3-384-914-01	DAMPER	
120	3-384-915-11	BRACKET (CP)	
121	3-384-918-01	RETAINER (DISC)	
122	3-384-908-11	ARM, CHUCKING	
124	3-384-888-06	SLIDER (L)	
125	3-384-887-03	LEVER (L)	
126	1-650-223-11	SENSOR FLEXIBLE BOARD	
127	A-3222-525-A	SENSOR BOARD, COMPLETE	
128	X-3366-854-1	CHASSIS (T) ASSY	
129	3-384-881-02	SPRING (12)	
130	3-384-917-01	SPRING (CH)	
132	X-3366-102-5	SLIDER (R) ASSY	
133	X-3366-853-3	CHASSIS (R) ASSY	
134	3-384-889-03	LEVER (R)	
135	3-384-897-01	GEAR (RACK)	
136	3-384-891-03	LEVER (ST)	
137	3-388-331-01	SPRING (T)	
138	3-387-776-01	BELT (L)	
* 139	3-704-132-01	LABEL (K), SELF	
140	X-3366-857-1	ARM ASSY, ROLLER	
M903	A-3252-580-A	MOTOR (L) ASSY (LOADING)	
S901	1-692-441-11	SWITCH, MICROPHONE (DISC DET)	

(4) MECHANISM DECK SECTION-2
(MG-305X-130)



Ref. No.	Part No.	Description	Remark
151	A-3252-586-A	SHAFT (SL) ASSY	
⚠152	8-848-327-11	DEVICE, OPTICAL KSS-410A	
153	3-384-922-02	GEAR (SL FEED)	
154	3-384-920-01	RETAINER (SL FEED)	
* 155	1-650-144-11	MOTOR BOARD	
156	1-646-402-31	MOTOR FLEXIBLE BOARD	
157	X-3366-855-1	CHASSIS (OPT) ASSY (OUTSERT)	
158	X-3366-100-4	BASE (DRIVING) ASSY	

Ref. No.	Part No.	Description	Remark
159	3-384-912-01	GEAR (K2)	
160	3-570-615-00	POLY-WASHER (DIA. 1. 2)	
161	3-384-913-11	SPRING (THRUST RETAINER)	
* 162	3-920-313-01	CUSHION (SL)	
163	3-918-062-01	TABLE, DISC	
164	1-652-794-11	PICKUP FLEXIBLE BOARD	
M901	X-3367-484-1	MOTOR (SPINDLE) ASSY	
M902	A-3252-585-A	MOTOR (SL) ASSY (SLED)	

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le neméro spécifié.

SECTION 7
ELECTRICAL PARTS LIST

DISPLAY

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
		DISPLAY BOARD			
		**********			
		< CAPACITOR >			
C801	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C802	1-163-137-00	CERAMIC CHIP	680PF	5% 50V	
		< CONNECTOR >			
CNP801	1-764-423-11	PIN, CONNECTOR 12P			
		< DIODE >			
D801	8-719-420-52	DIODE	MA729-TX		
D851	8-719-422-97	DIODE	MA8091-M		
D852	8-719-422-97	DIODE	MA8091-M		
D853	8-719-422-97	DIODE	MA8091-M		
D855	8-719-422-97	DIODE	MA8091-M		
D860	8-719-422-43	DIODE	MA8051-H		
		< IC >			
IC801	8-759-289-80	IC	NJU6432BFD1		
		< LIQUID CRYSTAL DISPLAY >			
LCD801	1-810-847-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< SWITCH >			
LSW801	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (⏏)			
LSW802	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (CD)			
LSW803	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (FM)			
LSW804	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (AM)			
LSW805	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (DSPL)			
LSW806	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (LOUD)			
LSW807	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (MUTE)			
LSW808	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (PRST +▶▶)			
LSW809	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (PRST ◀◀-)			
LSW810	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (+)			
LSW811	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (-)			
LSW812	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (SEL)			
LSW813	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (LCL)			
LSW814	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (MONO)			
LSW815	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (OFF)			
LSW816	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (SEEKAMS+▶▶)			
LSW817	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (SEEKAMS◀◀-)			
LSW818	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (INTOR 1)			
LSW819	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (REPEAT 2)			
LSW820	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (SHUF 3)			
LSW821	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (4)			
LSW822	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (5)			
LSW823	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (6)			
LSW824	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (7)			
LSW825	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (8)			
LSW826	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (9)			
LSW827	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (10)			
LSW828	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (BTM)			
		< PILOT LAMP >			
PL801	1-517-181-11	LAMP, PILOT (GREEN)			
PL802	1-517-181-11	LAMP, PILOT (GREEN)			
PL803	1-517-181-21	LAMP, PILOT (AMBER)			
PL804	1-517-181-21	LAMP, PILOT (AMBER)			
		< TRANSISTOR >			
Q801	8-729-904-78	TRANSISTOR	DTD113ZK		
Q802	8-729-904-66	TRANSISTOR	DTD113EK		
Q803	8-729-904-78	TRANSISTOR	DTD113ZK		
Q804	8-729-904-66	TRANSISTOR	DTD113EK		
		< RESISTOR >			
R801	1-219-286-21	METAL GLAZE	680	2% 1/16W	
R802	1-219-286-21	METAL GLAZE	680	2% 1/16W	
R803	1-219-286-21	METAL GLAZE	680	2% 1/16W	
R804	1-219-290-21	METAL GLAZE	1K	2% 1/16W	
R805	1-219-294-21	METAL GLAZE	1.5K	2% 1/16W	
R806	1-219-298-21	METAL GLAZE	2.2K	2% 1/16W	
R807	1-219-298-21	METAL GLAZE	2.2K	2% 1/16W	
R808	1-219-302-21	METAL GLAZE	3.3K	2% 1/16W	
R809	1-219-306-21	METAL GLAZE	4.7K	2% 1/16W	
R810	1-219-310-21	METAL GLAZE	6.8K	2% 1/16W	

DISPLAY **MAIN**

Ref. No.	Part No.	Description			Remark
R811	1-219-314-21	METAL GLAZE	10K	2%	1/16W
R812	1-219-318-21	METAL GLAZE	15K	2%	1/16W
R813	1-219-322-21	METAL GLAZE	22K	2%	1/16W
R814	1-219-286-21	METAL GLAZE	680	2%	1/16W
R815	1-219-286-21	METAL GLAZE	680	2%	1/16W
R816	1-219-286-21	METAL GLAZE	680	2%	1/16W
R817	1-219-290-21	METAL GLAZE	1K	2%	1/16W
R818	1-219-294-21	METAL GLAZE	1.5K	2%	1/16W
R819	1-219-294-21	METAL GLAZE	1.5K	2%	1/16W
R820	1-219-298-21	METAL GLAZE	2.2K	2%	1/16W
R821	1-219-302-21	METAL GLAZE	3.3K	2%	1/16W
R822	1-219-306-21	METAL GLAZE	4.7K	2%	1/16W
R823	1-219-310-21	METAL GLAZE	6.8K	2%	1/16W
R824	1-219-314-21	METAL GLAZE	10K	2%	1/16W
R825	1-219-318-21	METAL GLAZE	15K	2%	1/16W
R826	1-219-322-21	METAL GLAZE	22K	2%	1/16W
R828	1-216-041-00	METAL CHIP	470	5%	1/10W
R829	1-216-090-00	METAL CHIP	51K	5%	1/10W
R830	1-216-027-00	METAL CHIP	120	5%	1/10W
R831	1-216-029-00	METAL CHIP	150	5%	1/10W
R832	1-216-033-00	METAL CHIP	220	5%	1/10W
R833	1-216-035-00	METAL CHIP	270	5%	1/10W
R834	1-216-033-00	METAL CHIP	220	5%	1/10W
R835	1-216-035-00	METAL CHIP	270	5%	1/10W
R836	1-216-033-00	METAL CHIP	220	5%	1/10W
R837	1-216-035-00	METAL CHIP	270	5%	1/10W
R838	1-216-027-00	METAL CHIP	120	5%	1/10W
R839	1-216-029-00	METAL CHIP	150	5%	1/10W
R840	1-216-033-00	METAL CHIP	220	5%	1/10W
R841	1-216-035-00	METAL CHIP	270	5%	1/10W
R842	1-216-027-00	METAL CHIP	120	5%	1/10W
R843	1-216-029-00	METAL CHIP	150	5%	1/10W
R844	1-216-027-00	METAL CHIP	120	5%	1/10W
R845	1-216-029-00	METAL CHIP	150	5%	1/10W
R846	1-216-049-00	METAL GLAZE	1K	5%	1/10W

****

* A-3222-878-A MAIN BOARD, COMPLETE

****

* 3-921-801-01 HEAT SINK (T)

7-621-770-67 SCREW +PTT 2.6X6 (S)

< CAPACITOR >

C100	1-126-157-11	ELECT	10uF	20%	16V
C101	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C102	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C103	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C104	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C105	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C108	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C109	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C111	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C113	1-163-081-00	CERAMIC CHIP	0.22uF		25V
C117	1-126-157-11	ELECT	10uF	20%	16V
C118	1-126-157-11	ELECT	10uF	20%	16V
C119	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C120	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C122	1-163-078-11	CERAMIC CHIP	0.033uF	10%	25V
C123	1-164-346-11	CERAMIC CHIP	1uF		16V
C124	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C125	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C126	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C130	1-136-165-00	FILM	0.1uF	5%	50V
C131	1-136-165-00	FILM	0.1uF	5%	50V
C132	1-136-165-00	FILM	0.1uF	5%	50V
C133	1-136-165-00	FILM	0.1uF	5%	50V
C140	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C142	1-162-638-11	CERAMIC CHIP	1uF		16V
C143	1-162-638-11	CERAMIC CHIP	1uF		16V
C150	1-126-288-11	ELECT	4.7uF	20%	16V
C200	1-126-157-11	ELECT	10uF	20%	16V
C201	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C202	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C203	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C204	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C205	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C208	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C209	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C211	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C213	1-163-081-00	CERAMIC CHIP	0.22uF		25V
C217	1-126-157-11	ELECT	10uF	20%	16V
C218	1-126-157-11	ELECT	10uF	20%	16V
C219	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C220	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C222	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C223	1-162-638-11	CERAMIC CHIP	1uF		16V
C224	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C225	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C226	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C230	1-136-165-00	FILM	0.1uF	5%	50V
C231	1-136-165-00	FILM	0.1uF	5%	50V
C232	1-136-165-00	FILM	0.1uF	5%	50V
C233	1-136-165-00	FILM	0.1uF	5%	50V
C240	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C242	1-162-638-11	CERAMIC CHIP	1uF		16V
C243	1-162-638-11	CERAMIC CHIP	1uF		16V
C250	1-126-288-11	ELECT	4.7uF	20%	16V

Ref. No.	Part No.	Description			Remark
C300	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C301	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C302	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C303	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C304	1-124-584-00	ELECT	100uF	20%	10V
C305	1-162-638-11	CERAMIC CHIP	1uF		16V
C306	1-124-584-00	ELECT	100uF	20%	10V
C307	1-124-584-00	ELECT	100uF	20%	10V
C308	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C310	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C311	1-126-288-11	ELECT	4.7uF	20%	16V
C312	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C313	1-124-584-00	ELECT	100uF	20%	10V
C314	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C315	1-126-103-11	ELECT	470uF	20%	16V
C316	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C317	1-126-288-11	ELECT	4.7uF	20%	16V
C318	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C500	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C501	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C502	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C503	1-126-162-11	ELECT	3.3uF	20%	50V
C504	1-126-157-11	ELECT	10uF	20%	16V
C506	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C507	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C508	1-124-584-00	ELECT	100uF	20%	10V
C509	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C510	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C511	1-125-701-11	CAP, DOUBLE LAYER			0.047F
C512	1-163-077-00	CERAMIC CHIP	0.1uF		50V
C513	1-124-584-00	ELECT	100uF	20%	10V
C514	1-124-584-00	ELECT	100uF	20%	10V
C516	1-163-189-00	CERAMIC CHIP	220PF	5%	50V
C519	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C522	1-163-077-00	CERAMIC CHIP	0.1uF		50V
C523	1-163-077-00	CERAMIC CHIP	0.1uF		50V
C525	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C526	1-128-057-11	ELECT	330uF	20%	6.3V
C527	1-128-057-11	ELECT	330uF	20%	6.3V
C528	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C530	1-164-346-11	CERAMIC CHIP	1uF		16V
C531	1-164-346-11	CERAMIC CHIP	1uF		16V
C532	1-126-157-11	ELECT	10uF	20%	16V
C540	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C541	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C543	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C544	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C574	1-126-768-11	ELECT	2200uF	20%	16V

Ref. No.	Part No.	Description			Remark
C578	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C600	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C601	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C602	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C604	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C605	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C606	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C607	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C608	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C609	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C610	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
C612	1-136-169-00	FILM	0.22uF	5%	50V
C613	1-130-479-00	MYLAR	0.0047uF	5%	50V
C614	1-163-055-00	CERAMIC CHIP	0.0047uF	10%	50V
C617	1-124-589-11	ELECT	47uF	20%	16V
C619	1-124-589-11	ELECT	47uF	20%	16V
C621	1-124-234-00	ELECT	22uF	20%	16V
C623	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C626	1-126-803-11	ELECT	47uF	20%	50V
C699	1-163-005-11	CERAMIC CHIP	470PF	10%	50V

< JACK >

CNJ51	1-764-697-41	JACK, PIN 4P (OUT)
CNJ500	1-566-822-41	JACK (REMOTE IN)
CNJ502	1-764-808-11	JACK (ANT) (ANT-IN)

< CONNECTOR >

CNP501	1-764-426-11	PLUG, CONNECTOR 15P
CNP502	1-764-422-11	PLUG, CONNECTOR 12P
CNP504	1-764-617-12	PIN, CONNECTOR (PC BOARD) 30P

< GAP DISCHARGE >

CP601	1-519-504-11	GAP, DISCHARGE

< DIODE >

D300	8-719-034-22	DIODE	MA4039-M(QZ)
D303	8-719-404-46	DIODE	MA110
D304	8-719-050-86	DIODE	1SS133T-91S
D305	8-719-404-46	DIODE	MA110
D306	8-719-404-46	DIODE	MA110
D500	8-719-109-97	DIODE	RD6.8ES-B2
D501	8-719-049-38	DIODE	1N5404TU
D502	8-719-034-46	DIODE	MA4062-M(QZ)
D503	8-719-050-86	DIODE	1SS133T-91S
D504	8-719-034-61	DIODE	MA4091-L(QZ)
D505	8-719-034-53	DIODE	MA4075-L(QZ)
D506	8-719-034-90	DIODE	MA4160-M(QZ)
D507	8-719-034-42	DIODE	MA4056-M(QZ)

MAIN

Ref. No.	Part No.	Description	Remark
D508	8-719-034-42	DIODE MA4056-M(QZ)	
D509	8-719-914-44	DIODE DAP202K	
D510	8-719-050-86	DIODE 1SS133T-91S	
D512	8-719-977-03	DIODE DTZ5.6B	
D513	8-719-034-70	DIODE MA4110-M(QZ)	
D514	8-719-109-97	DIODE RD6.8ES-B2	
D515	8-719-109-97	DIODE RD6.8ES-B2	
D518	8-719-034-46	DIODE MA4062-M(QZ)	
D521	8-719-104-34	DIODE 1S2836	
D523	8-719-034-42	DIODE MA4056-M(QZ)	
D526	8-719-977-12	DIODE DTZ6.8B	
D529	8-719-977-12	DIODE DTZ6.8B	
D531	8-719-977-12	DIODE DTZ6.8B	
D532	8-719-977-12	DIODE DTZ6.8B	
D533	8-719-034-38	DIODE MA4051-M(QZ)	
D534	8-719-977-12	DIODE DTZ6.8B	
D535	8-719-050-86	DIODE 1SS133T-91S	
D699	8-719-981-59	DIODE FC805	
		< IC >	
IC301	8-759-196-57	IC SM5874AM-ET	
IC302	8-752-063-44	IC CXA1646Q	
IC303	8-759-260-77	IC HA13150A	
IC304	8-759-100-96	IC UPC4558G2	
IC306	8-759-100-96	IC UPC4558G2	
IC501	8-759-336-32	IC uPD75518GF-270-3B9	
IC502	8-759-097-36	IC RH5VA40AA	
IC603	8-759-823-81	IC LC7216M	
		< JUMPER RESISTOR >	
JR1	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR2	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR3	1-216-295-00	CONDUCTOR, CHIP	
JR9	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR10	1-216-295-00	CONDUCTOR, CHIP	
JR11	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR12	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR13	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR14	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR20	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR21	1-216-295-00	CONDUCTOR, CHIP	
JR22	1-216-295-00	CONDUCTOR, CHIP	
JR24	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR26	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR27	1-216-295-00	CONDUCTOR, CHIP	
JR28	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR29	1-216-295-00	CONDUCTOR, CHIP	
JR30	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR31	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR32	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR33	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR34	1-216-295-00	CONDUCTOR, CHIP	
JR37	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR38	1-216-295-00	CONDUCTOR, CHIP	
JR39	1-216-295-00	CONDUCTOR, CHIP	
JR41	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR42	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR43	1-216-295-00	CONDUCTOR, CHIP	
JR45	1-216-295-00	CONDUCTOR, CHIP	
JR46	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR47	1-216-295-00	CONDUCTOR, CHIP	
JR48	1-216-295-00	CONDUCTOR, CHIP	
JR49	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR51	1-216-295-00	CONDUCTOR, CHIP	
JR52	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR55	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR56	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR57	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR58	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR60	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR61	1-216-295-00	CONDUCTOR, CHIP	
JR63	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR64	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR65	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR68	1-216-295-00	CONDUCTOR, CHIP	
JR69	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR72	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR73	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR74	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR75	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR76	1-216-295-00	CONDUCTOR, CHIP	
JR77	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR78	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR79	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR82	1-216-198-00	METAL GLAZE 1K 5% 1/8W	
JR83	1-216-295-00	CONDUCTOR, CHIP	
JR85	1-216-295-00	CONDUCTOR, CHIP	
JR86	1-216-295-00	CONDUCTOR, CHIP	
JR87	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR88	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR89	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR90	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR91	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR92	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR93	1-216-296-00	METAL CHIP 0 5% 1/8W	

Ref. No.	Part No.	Description			Remark
JR94	1-216-296-00	METAL CHIP	0	5% 1/8W	
JR95	1-216-296-00	METAL CHIP	0	5% 1/8W	
JR96	1-216-295-00	CONDUCTOR, CHIP			
JR97	1-216-295-00	CONDUCTOR, CHIP			
JR99	1-216-295-00	CONDUCTOR, CHIP			
JR100	1-216-295-00	CONDUCTOR, CHIP			
JR100	1-216-296-00	METAL CHIP	0	5% 1/8W	
JR101	1-216-296-00	METAL CHIP	0	5% 1/8W	
JR102	1-216-295-00	CONDUCTOR, CHIP			
JR118	1-216-296-00	METAL CHIP	0	5% 1/8W	
JR306	1-216-296-00	METAL CHIP	0	5% 1/8W	
JR307	1-216-295-00	CONDUCTOR, CHIP			
JR308	1-216-296-00	METAL CHIP	0	5% 1/8W	
JR309	1-216-296-00	METAL CHIP	0	5% 1/8W	
JR311	1-216-295-00	CONDUCTOR, CHIP			
JR313	1-216-296-00	METAL CHIP	0	5% 1/8W	
JR562	1-216-295-00	CONDUCTOR, CHIP			
JR563	1-216-295-00	CONDUCTOR, CHIP			
		< COIL >			
L301	1-410-973-11	INDUCTOR	22uH		
L303	1-410-973-11	INDUCTOR	22uH		
L501	1-410-973-11	INDUCTOR	22uH		
L602	1-410-973-11	INDUCTOR	22uH		
		< TRANSISTOR >			
Q101	8-729-920-21	TRANSISTOR	DTC314TKH04		
Q102	8-729-920-21	TRANSISTOR	DTC314TKH04		
Q201	8-729-920-21	TRANSISTOR	DTC314TKH04		
Q202	8-729-920-21	TRANSISTOR	DTC314TKH04		
Q301	8-729-020-67	TRANSISTOR	XN1A312-TX		
Q500	8-729-019-00	TRANSISTOR	2SD2394-G		
Q501	8-729-429-92	TRANSISTOR	XN1211		
Q502	8-729-020-67	TRANSISTOR	XN1A312-TX		
Q503	8-729-020-67	TRANSISTOR	XN1A312-TX		
Q504	8-729-422-29	TRANSISTOR	2SD601A-S		
Q505	8-729-106-68	TRANSISTOR	2SD1615A-GP		
Q506	8-729-820-46	TRANSISTOR	2SB1202FAS		
Q507	8-729-207-56	TRANSISTOR	RN1402		
Q508	8-729-820-68	TRANSISTOR	2SD1802FA-S		
Q509	8-729-020-67	TRANSISTOR	XN1A312-TX		
Q510	8-729-207-66	TRANSISTOR	RN1411-TE85L		
Q511	8-729-106-60	TRANSISTOR	2SB1115A		
Q512	8-729-106-60	TRANSISTOR	2SB1115A		
Q513	8-729-424-08	TRANSISTOR	UN2111		
Q514	8-729-106-60	TRANSISTOR	2SB1115A		
Q515	8-729-424-08	TRANSISTOR	UN2111		
Q516	8-729-421-22	TRANSISTOR	UN2211		
Q517	8-729-424-59	TRANSISTOR	UN2212		
Q519	8-729-424-59	TRANSISTOR	UN2212		
Q520	8-729-019-00	TRANSISTOR	2SD2394-G		
Q521	8-729-422-87	TRANSISTOR	2SB1073-R		
Q522	8-729-422-29	TRANSISTOR	2SD601A-S		
Q523	8-729-424-59	TRANSISTOR	UN2212		
Q524	8-729-402-13	TRANSISTOR	XN1501		
Q525	8-729-424-59	TRANSISTOR	UN2212		
Q526	8-729-420-20	TRANSISTOR	XN4312		
Q601	8-729-021-94	TRANSISTOR	2SK1657-T1B		
		< RESISTOR >			
R101	1-216-095-00	METAL CHIP	82K	5% 1/10W	
R102	1-216-095-00	METAL CHIP	82K	5% 1/10W	
R103	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R104	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R105	1-216-093-00	METAL CHIP	68K	5% 1/10W	
R106	1-216-093-00	METAL CHIP	68K	5% 1/10W	
R109	1-216-089-00	METAL CHIP	47K	5% 1/10W	
R110	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R111	1-216-065-00	METAL CHIP	4.7K	5% 1/10W	
R112	1-216-065-00	METAL CHIP	4.7K	5% 1/10W	
R115	1-216-041-00	METAL CHIP	470	5% 1/10W	
R116	1-216-041-00	METAL CHIP	470	5% 1/10W	
R117	1-216-065-00	METAL CHIP	4.7K	5% 1/10W	
R118	1-216-065-00	METAL CHIP	4.7K	5% 1/10W	
R122	1-216-057-00	METAL CHIP	2.2K	5% 1/10W	
R124	1-216-134-00	METAL CHIP	2.2	5% 1/8W	
R125	1-216-134-00	METAL CHIP	2.2	5% 1/8W	
R126	1-216-134-00	METAL CHIP	2.2	5% 1/8W	
R127	1-216-134-00	METAL CHIP	2.2	5% 1/8W	
R128	1-216-075-00	METAL CHIP	12K	5% 1/10W	
R129	1-216-075-00	METAL CHIP	12K	5% 1/10W	
R130	1-216-077-00	METAL CHIP	15K	5% 1/10W	
R131	1-216-077-00	METAL CHIP	15K	5% 1/10W	
R132	1-216-129-00	METAL CHIP	2.2M	5% 1/10W	
R133	1-216-129-00	METAL CHIP	2.2M	5% 1/10W	
R201	1-216-095-00	METAL CHIP	82K	5% 1/10W	
R202	1-216-095-00	METAL CHIP	82K	5% 1/10W	
R203	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R204	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R205	1-216-093-00	METAL CHIP	68K	5% 1/10W	
R206	1-216-093-00	METAL CHIP	68K	5% 1/10W	
R209	1-216-089-00	METAL CHIP	47K	5% 1/10W	
R210	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R211	1-216-065-00	METAL CHIP	4.7K	5% 1/10W	
R212	1-216-065-00	METAL CHIP	4.7K	5% 1/10W	
R215	1-216-041-00	METAL CHIP	470	5% 1/10W	
R216	1-216-041-00	METAL CHIP	470	5% 1/10W	

MAIN

Ref. No.	Part No.	Description			Remark
R217	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R218	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R222	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R224	1-216-134-00	METAL CHIP	2.2	5%	1/8W
R225	1-216-134-00	METAL CHIP	2.2	5%	1/8W
R226	1-216-134-00	METAL CHIP	2.2	5%	1/8W
R227	1-216-134-00	METAL CHIP	2.2	5%	1/8W
R228	1-216-075-00	METAL CHIP	12K	5%	1/10W
R229	1-216-075-00	METAL CHIP	12K	5%	1/10W
R230	1-216-077-00	METAL CHIP	15K	5%	1/10W
R231	1-216-077-00	METAL CHIP	15K	5%	1/10W
R232	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R233	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R300	1-216-113-00	METAL CHIP	470K	5%	1/10W
R301	1-216-027-00	METAL CHIP	120	5%	1/10W
R303	1-216-001-00	METAL CHIP	10	5%	1/10W
R304	1-216-001-00	METAL CHIP	10	5%	1/10W
R305	1-216-037-00	METAL CHIP	330	5%	1/10W
R308	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R309	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
R310	1-216-025-00	METAL GLAZE	100	5%	1/10W
R311	1-216-025-00	METAL GLAZE	100	5%	1/10W
R312	1-216-025-00	METAL GLAZE	100	5%	1/10W
R313	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R314	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R318	1-216-198-00	METAL GLAZE	1K	5%	1/8W
R501	1-216-005-00	METAL CHIP	15	5%	1/10W
R502	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R503	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R504	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R505	1-216-041-00	METAL CHIP	470	5%	1/10W
R506	1-216-089-00	METAL CHIP	47K	5%	1/10W
R507	1-216-081-00	METAL CHIP	22K	5%	1/10W
R508	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R509	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R510	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R511	1-216-079-00	METAL CHIP	18K	5%	1/10W
R512	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R513	1-216-105-00	METAL GLAZE	220K	5%	1/10W
R514	1-216-089-00	METAL CHIP	47K	5%	1/10W
R515	1-216-073-00	METAL CHIP	10K	5%	1/10W
R516	1-216-089-00	METAL CHIP	47K	5%	1/10W
R517	1-216-077-00	METAL CHIP	15K	5%	1/10W
R518	1-216-073-00	METAL CHIP	10K	5%	1/10W
R519	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R520	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R521	1-216-194-00	METAL CHIP	680	5%	1/8W
R522	1-216-105-00	METAL GLAZE	220K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R524	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R525	1-216-198-00	METAL GLAZE	1K	5%	1/8W
R526	1-216-025-00	METAL GLAZE	100	5%	1/10W
R527	1-216-198-00	METAL GLAZE	1K	5%	1/8W
R528	1-216-174-00	METAL GLAZE	100	5%	1/8W
R529	1-216-174-00	METAL GLAZE	100	5%	1/8W
R530	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R531	1-216-073-00	METAL CHIP	10K	5%	1/10W
R532	1-216-073-00	METAL CHIP	10K	5%	1/10W
R533	1-216-097-00	METAL CHIP	100K	5%	1/10W
R535	1-216-097-00	METAL CHIP	100K	5%	1/10W
R546	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R547	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R548	1-216-073-00	METAL CHIP	10K	5%	1/10W
R549	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R550	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R551	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R557	1-216-073-00	METAL CHIP	10K	5%	1/10W
R558	1-216-073-00	METAL CHIP	10K	5%	1/10W
R566	1-216-097-00	METAL CHIP	100K	5%	1/10W
R567	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R568	1-216-025-00	METAL GLAZE	100	5%	1/10W
R569	1-216-025-00	METAL GLAZE	100	5%	1/10W
R572	1-216-254-00	METAL GLAZE	220K	5%	1/8W
R573	1-216-105-00	METAL GLAZE	220K	5%	1/10W
R575	1-216-089-00	METAL CHIP	47K	5%	1/10W
R576	1-216-097-00	METAL CHIP	100K	5%	1/10W
R577	1-216-226-00	METAL GLAZE	15K	5%	1/8W
R578	1-216-198-00	METAL GLAZE	1K	5%	1/8W
R580	1-216-246-00	METAL GLAZE	100K	5%	1/8W
R581	1-216-105-00	METAL GLAZE	220K	5%	1/10W
R582	1-216-105-00	METAL GLAZE	220K	5%	1/10W
R583	1-216-097-00	METAL CHIP	100K	5%	1/10W
R584	1-216-089-00	METAL CHIP	47K	5%	1/10W
R585	1-216-073-00	METAL CHIP	10K	5%	1/10W
R586	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R587	1-216-089-00	METAL CHIP	47K	5%	1/10W
R588	1-216-089-00	METAL CHIP	47K	5%	1/10W
R589	1-216-073-00	METAL CHIP	10K	5%	1/10W
R590	1-216-089-00	METAL CHIP	47K	5%	1/10W
R600	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R601	1-216-212-00	METAL GLAZE	3.9K	5%	1/8W
R602	1-216-073-00	METAL CHIP	10K	5%	1/10W
R603	1-216-198-00	METAL GLAZE	1K	5%	1/8W
R604	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R605	1-216-073-00	METAL CHIP	10K	5%	1/10W
R606	1-216-210-00	METAL GLAZE	3.3K	5%	1/8W
R607	1-216-073-00	METAL CHIP	10K	5%	1/10W
R608	1-216-057-00	METAL CHIP	2.2K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R609	1-216-097-00	METAL CHIP	100K	5%	1/10W
R615	1-216-113-00	METAL CHIP	470K	5%	1/10W
R624	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R625	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R630	1-216-178-00	METAL GLAZE	150	5%	1/8W
R631	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R632	1-216-049-00	METAL GLAZE	1K	5%	1/10W
		< SWITCH >			
SW501	1-571-478-11	SWITCH, SLIDE (POWER SEL)			
SW503	1-571-532-21	SWITCH, TACTIL (RESET)			
		< THERMISTOR >			
TH501	1-810-890-21	THERMISTOR			
TH502	1-809-148-11	THERMISTOR PTH8L07AR2R0M1B510			
		< VIBRATOR >			
X301	1-579-280-31	VIBRATOR, CRYSTAL (16.934MHz)			
X501	1-760-096-31	VIBRATOR, CRYSTAL (4.19MHz)			
X601	1-577-126-51	VIBRATOR, CRYSTAL (7.2MHz)			
**********					
*	1-650-144-11	MOTOR BOARD			
		**********			
		< CONNECTOR >			
* CNJ303	1-750-160-21	CONNECTOR, FPC 7P			
		< SWITCH >			
S301	1-572-467-21	SWITCH, PUSH (1 KEY) (LIMIT)			
**********					
	A-3298-222-A	SERVO BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C1	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C2	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C3	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C4	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C7	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C8	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C9	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C10	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C11	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C12	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C13	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C14	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C15	1-126-191-11	ELECT	0.47uF	20%	50V
C16	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C17	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C18	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C20	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C21	1-164-346-11	CERAMIC CHIP	1uF		16V
C22	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C23	1-164-346-11	CERAMIC CHIP	1uF		16V
C24	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C25	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C26	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C27	1-135-166-21	TANTALUM CHIP	47uF	10%	10V
C28	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C30	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C31	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C32	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C34	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C35	1-135-166-21	TANTALUM CHIP	47uF	10%	10V
		< CONNECTOR >			
CNJ1	1-766-491-11	CONNECTOR, FPC 17P			
* CNJ2	1-750-159-21	CONNECTOR, FPC 5P			
* CNJ3	1-750-160-21	CONNECTOR, FPC 7P			
CNJ4	1-764-616-12	HOUSING, CONNECTOR (PC BOARD) 30P			
* CNP1	1-580-055-21	PIN, CONNECTOR 2P			
		< IC >			
IC1	8-752-059-38	IC CXA1571M			
IC2	8-752-351-94	IC CXD2515Q			
IC3	8-759-823-87	IC LB1638M			
IC4	8-759-925-72	IC SN74HC02ANS			
IC5	8-759-087-55	IC MPC1732MR2			
IC6	8-759-087-53	IC MPC1730MR2			
		< COIL >			
L1	1-412-058-11	INDUCTOR CHIP	10uH		
L2	1-412-058-11	INDUCTOR CHIP	10uH		
L3	1-412-058-11	INDUCTOR CHIP	10uH		
		< TRANSISTOR >			
Q1	8-729-024-26	PHOTO TRANSISTOR CPT-181S-C-TU			
Q2	8-729-024-26	PHOTO TRANSISTOR CPT-181S-C-TU			
Q5	8-729-141-48	TRANSISTOR 2SB624-BV345			
		< RESISTOR >			
R1	1-216-024-00	METAL GLAZE	91	5%	1/10W
R2	1-216-001-00	METAL CHIP	10	5%	1/10W
R4	1-216-081-00	METAL CHIP	22K	5%	1/10W
R5	1-216-073-00	METAL CHIP	10K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R8	1-216-081-00	METAL CHIP	22K	5%	1/10W
R9	1-216-075-00	METAL CHIP	12K	5%	1/10W
R10	1-216-075-00	METAL CHIP	12K	5%	1/10W
R11	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R12	1-216-077-00	METAL CHIP	15K	5%	1/10W
R13	1-216-077-00	METAL CHIP	15K	5%	1/10W
R14	1-216-097-00	METAL CHIP	100K	5%	1/10W
R15	1-216-085-00	METAL CHIP	33K	5%	1/10W
R16	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R17	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R18	1-216-073-00	METAL CHIP	10K	5%	1/10W
R19	1-216-121-00	METAL CHIP	1M	5%	1/10W
R20	1-216-097-00	METAL CHIP	100K	5%	1/10W
R21	1-216-073-00	METAL CHIP	10K	5%	1/10W
R22	1-216-033-00	METAL CHIP	220	5%	1/10W
R23	1-216-033-00	METAL CHIP	220	5%	1/10W
R24	1-216-033-00	METAL CHIP	220	5%	1/10W
R25	1-216-073-00	METAL CHIP	10K	5%	1/10W
R28	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R29	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R30	1-218-758-11	METAL CHIP	180K	0.50%	1/10W
R31	1-218-758-11	METAL CHIP	180K	0.50%	1/10W
R32	1-216-073-00	METAL CHIP	10K	5%	1/10W
R36	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R37	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R38	1-216-101-00	METAL CHIP	150K	5%	1/10W
		< VARIABLE RESISTOR >			
RV1	1-238-091-11	RES, ADJ, CERMET	22K		
RV2	1-238-091-11	RES, ADJ, CERMET	22K		
		< SWITCH >			
SW1	1-571-754-31	SWITCH, PUSH (1 KEY) (DISC SET)			
		**********			
	A-3222-525-A	SENSOR BOARD, COMPLETE (Including SENSOR FLEXIBLE BOARD)			
		**********			
		< DIODE >			
D801	8-719-045-75	DIODE CL-200IR-X-TU (12cm CD DET)			
D802	8-719-045-75	DIODE CL-200IR-X-TU (DISC DET)			
		< RESISTOR >			
R801	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R802	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
		**********			

Ref. No.	Part No.	Description	Remark
	1-650-223-11	SENSOR FLEXIBLE BOARD	
		**********	
		< SWITCH >	
S901	1-692-441-11	SWITCH, MICROPHONE (DISC DET)	
		**********	
		MISCELLANEOUS	
		**********	
10	1-769-773-11	CORD (WITH CONNECTOR)	
⚠152	8-848-327-11	DEVICE, OPTICAL KSS-410A	
156	1-646-402-31	MOTOR FLEXIBLE BOARD	
164	1-652-794-11	PICKUP FLEXIBLE BOARD	
F1	1-533-326-11	FUSE (BLADE TYPE) (AUTO FUSE) 3A	
F2	1-533-331-11	FUSE (BLADE TYPE) (AUTO FUSE) 15A	
M901	X-3367-484-1	MOTOR (SPINDLE) ASSY	
M902	A-3252-585-A	MOTOR (SL) ASSY (SLED)	
M903	A-3252-580-A	MOTOR (L) ASSY (LOADING)	
S901	1-692-441-11	SWITCH, MICROPHONE (DISC DET)	

****

HARDWARE LIST

****

#1	7-621-255-25	SCREW +P 2X4
#2	7-621-770-67	SCREW +PTT 2.6X6 (S)
#3	7-621-770-XX	SCREW +PTT 2.6X8 (S)
#4	7-685-106-19	SCREW +P 2X10 TYPE2 NON-SLIT
#5	7-621-773-86	SCREW +PTT 2.6X4 (S)
#6	7-621-772-10	SCREW +B 2X4
#7	7-621-772-60	SCREW +B 2X12
#8	7-621-773-95	SCREW +PTT 2.6X6 (S)
#9	7-627-552-07	SCREW, PRECISION +P 1.7X2.5
#10	7-627-852-17	+P 1.7X4
#11	7-627-553-18	SCREW, PRECISION +P 2X2
#13	7-627-553-37	SCREW, PRECISION +P 2X3
#14	7-627-553-67	SCREW, PRECISION +P 2X5
#15	7-621-775-50	SCREW +PTT 2.6X10 (S)
#16	7-628-253-15	SCREW +PS 2X5

****

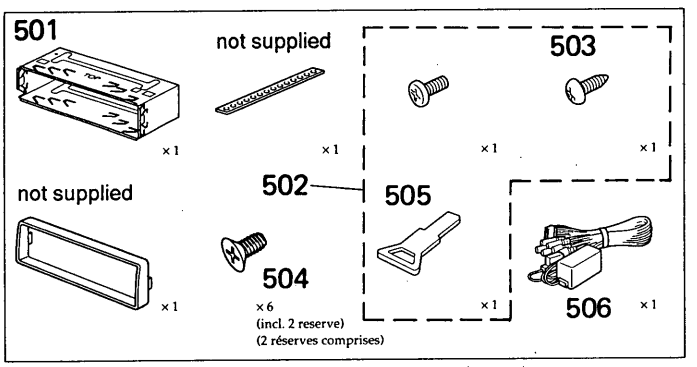
ACCESSORIES & PACKING MATERIALS

****

3-798-473-21 MANUAL, INSTRUCTION (ENGLISH, FRENCH)
3-798-477-21 MANUAL, INSTRUCTION, INSTALL (ENGLISH, FRENCH)
X-3369-665-1 CASE ASSY

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
		MOUNTING HARDWARE	
		**********	
* 501	3-916-161-01	FRAME, FITTING	
502	X-3370-076-1	SCREW ASSY (KEY), FITTING	
503	7-682-560-04	SCREW +P 4X6	
504	3-921-720-01	SCREW (5X10) (IT32) +K	
505	3-388-078-01	KEY	
506	1-769-773-11	CORD (WITH CONNECTOR)	



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9-959-958-11

Sony Corporation
Mobile Electronics Company

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Quality Engineering Dept.

CDX-5490

SONY
SERVICE MANUAL

US Model

SUPPLEMENT-1

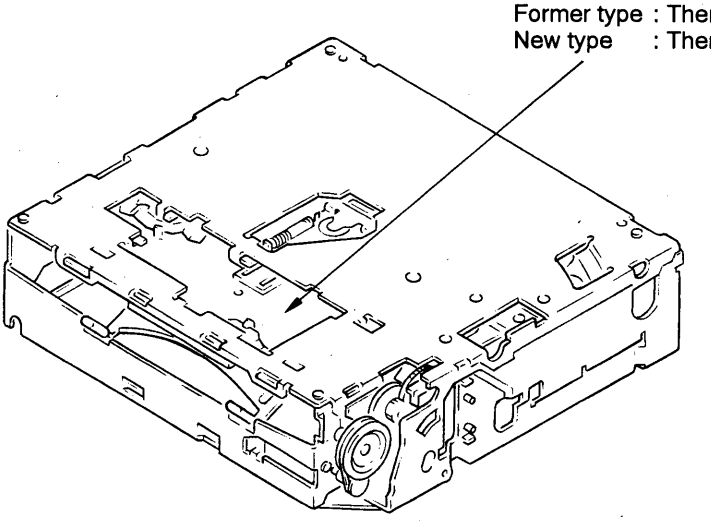
File this supplement with the service manual.

Subject: Mechanism Deck Modification

(ECN-CS501600)

The mechanism deck was changed from MG-305X-130 to MG-305M-130 in the middle of production.
On repairing the new mechanism deck, please refer to CDX-5090/5092 service manual supplement-2 (9-959-936-82).

- **New/Former Discrimination**



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CDX-5490

SONY

US Model

SERVICE MANUAL

CORRECTION-1

Correct your service manual as shown below.

☛: indicates corrected portion.

Page	INCORRECT				CORRECT			
	Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
42	56	3-921-847-31	BUTTON (TV) (AM)		56	3-921-845-11	BUTTON (TUNER) (AM) ☛	
	57	3-921-845-11	BUTTON (TUNER) (FM)		57	3-921-846-11	BUTTON (CD) (FM) ☛	
	59	3-921-846-11	BUTTON (CD)		59	3-921-847-31	BUTTON (TV) (CD) ☛	

(RPC-97009)

9-959-958-91

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Personal & Mobile Communication Company

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